



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

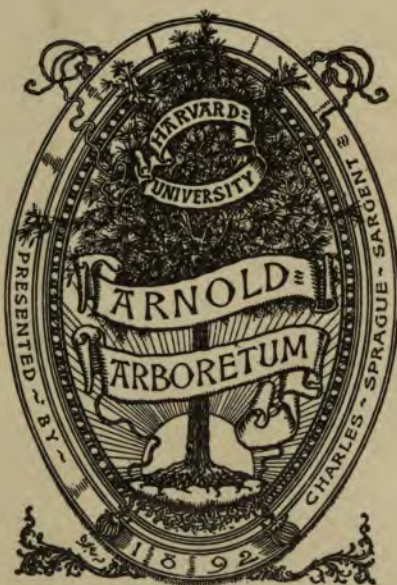
We also ask that you:

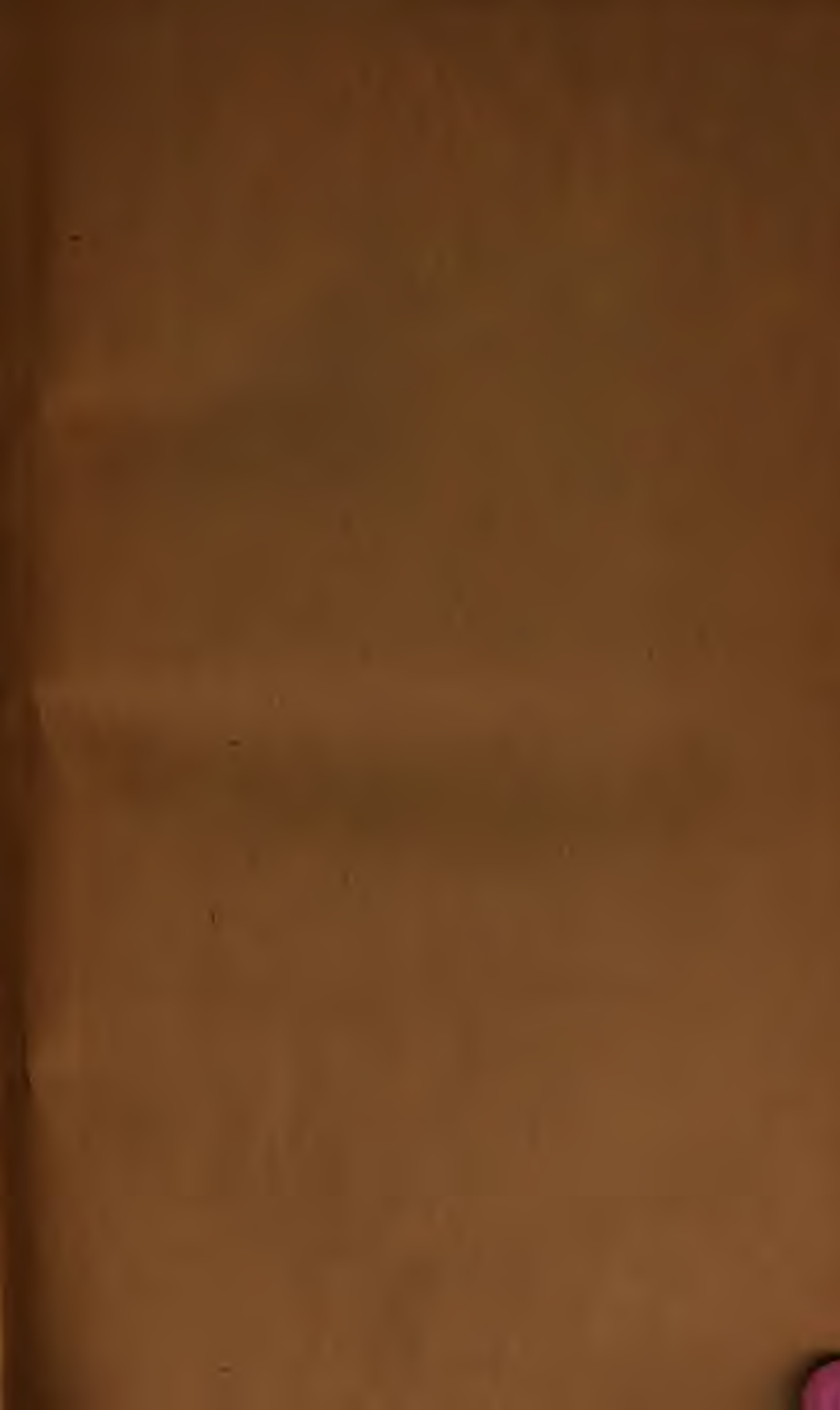
- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>

Per BI
53





S. order

#

THE
FL O R A L W O R L D

AND

GARDEN GUIDE.

~~~~~  
VOLUME V.  
~~~~~

LONDON:
GROOMBRIDGE AND SONS
5, PATERNOSTER ROW.
1862.

July 1911

24764

HARRILD, , LONDON.

INDEX.

- Acrophorus affinis* (fern), 156
Adiantum *Chilense*, 156;
scabrum, 156; *sulphu-*
reum, 131, 156
Agathe celestis variegata,
 125
Alocasia metallica, 131
Amaryllis aulica, 245; cri-
 num and *hamanthus*, 191;
 for window culture, 244
Aneimia collina, 216
 Annuals, their freshness and
 beauty, 41; new and bed-
 ding plants, 81
 Annuals for the north, 88
Antholyzas, 227
 Apples, scarce varieties, 160;
 stocks for, 183
 April, work for, 83
 Aquatic plants, the culture
 of, 121
 Arbour, making an, 273
 Artillery plant, 16
Asphalte walks, 62
Asplenium rhizophorum,
 217; *polymorphum*, 217;
palmatum, 217; *varians*,
 218; *bulbiferum* var. *ap-*
pendiculata, 218; *Veitch-*
ianum, 218; *fragrans*, 218;
formosum, 218; *fabianum*,
 218; *marinum*, 261
Athyrium filix femina, 131;
 var. *frizelliae*, 262
 Atmospheric air, 1
 August, work for, 181
Auriculas, 92
 Autumnal roses for town gar-
 dens, 250
Azalea amena, 130
Azaleas, 91, 114
Babianas, 227
 Basket plants, 84
 Beauty of Waltham (rose),
 235
 Bedders of the season, 201
 Bedding combinations, 123;
 plants, 135; new, 81
Begonia rex, diseased, 232
Berberis, 72; *japonica*, 207;
aquifolium, *Asiaticus*, *Bea-*
lii, *Darwinii*, 165; *dulcis*,
fascicularis, *hybrida*, *For-*
tuni, 166; *glumacea*, *in-*
termedia, *Jamesonii*, 167;
Hookerii, *japonica*, *tri-*
furca, *Nepalensis*, 168
Blechnum spicant (fern), 260
 Border, shady, 160
 Botanical technology, 85
 Bourbon roses, 251
 Brambles and bay leaves, 13
 Brilliant (rose), 236
 Bulbs, 209
Byblis linifolia, 121
 Calendar for the month: Ja-
 nuary, 13; February, 39;
 March, 62; April, 83;
 May, 110; June, 134;
 July, 158; August, 182;
 September, 206; October,
 229; November, 252; De-
 cember, 275
 Calendar, naturalist's, 253
Callihoe pedata nana, 81
Camellias growing too large,
 63; in bloom, 89; new,
 89; old, 90
 Cardinal flower, 63
Celosia aurea pyramidalis, 81
Centaurea candidissima, 63
Chamærops humilis, 84
 Charles Lefebvre (rose), 235
Cheilanthes mysurensis, 157
 Cherry-tree, barren, 278
Chimonanthus fragrans, 40
 China roses, 250
Chrysanthemum culture at
 the Temple Gardens, 4;
 large varieties for borders,
 5; varieties for showing in
 twelve-inch pots, 6; *pom-*
pones, 6
Cinerarias, 92
Citrus tribe, 7
Clarkia pulchella flore pleno,
 81
 Climbers under trees, 84
 Climbing plants, characters
 of, 99
 Cockchafer, 224
Coleus Verschaffeltii, 125
Coleus and *Zichya*, 278
 Comtesse de Seguier rose, 237
 Conifers, manuring, 135
 Conservatory plants, useful,
 74; walls, the construction
 and furnishing of, 79
Cosmos diversifolius atro-
sanguineus, 81
 Crace on the arrangement of
 colours, 117
 Cranstone's patent plant-
 houses, 108
 Creepers, greenhouse, 255
 Cucumbers grown at Chis-
 wick in 1861, 51
 Culture of the pear, 21
Cuphea zamapani, 82
 Cuttings, sale of, 20
Cyclamens, to preserve, 88
 Dahlias, the best twelve, 126
 Damp greenhouse, 84
 Daphne out of bloom, 111
Davallia bullata, 215
 Death of the Prince Con-
 sort, 3
 December, work for, 276
Desmanthus natans, 121
Deutzia gracilis, 84
Dielytra cucullaria, 198
 Dinner-table decorations, 169
 Dissecting leaves, 46
Doodia caudata, 217
 Double-glazed pit, 87
 Double glazing, 2
 Du Breuil on fruit-tree cul-
 ture, 238
 Early forcing, 16
Echinacea purpurea, 82
 Edging tiles, 45
 Educator, the young gar-
 deners', 223
Elodea guianensis, 122
Erythrina crista galli, 277
Euphorbia jacquiniiflora, 75
 Evergreen creeper, 277
 Every man his own fire
 brigade, 109
 Exhibition memoranda:

- leas, stove and greenhouse plants, pelargoniums, seedlings, and fruit, 153
 Exhibitions of July, 175; of September, 219; of the Royal Horticultural Society for 1862, 17
 Experiences in town gardening, 55
 February, work for, 39
 Fern cases, 95
 Ferneries and fern-houses, 213
 Fernery at Abbey Gardens, Ramsey, 187
 Ferns, exotic, 40; for the greenhouse, 47; for cover, 86; a selection of stove, 131; twelve, introduced by Messrs. Veitch and Son, 156; hardy varieties, 268
 Floral vignettes and skeleton leaves, 14
 Flowering shrubs, 183
 Flower-shows, 113; at home, 128
 Flower borders, mixed, 270
 Flowers for the season, 103
 Foliage bedders, 126
 Foliage lines, 208
 Fowls' dung, 159
 Fraser's nursery, new roses at, 101
 Friends of my youth, where are they? 197, 243
 Fruit-tree culture, 107; Du Breuil on, 238
 Fruit-trees in borders *versus* fruit-trees in pots, 267
 Fuchsia Meteor, 125
 Fuchsias, 131, 179; not blooming, 63; diseased, 255
 Fumigating, 184
 Garden beetle, 144
 Gardenia, on the culture of, 145
 Garden implements, ornaments and structures, 151; chairs, 152; roller, 152
 Gardening for children, 273
 Garden Oracle, 279
 Gas-heating, 254
 General Washington (rose), 236
 General Jacqueminot (rose), 237
 Geraniums in a turf pit, 40; old, 255
 Giant Emperor aster, 82
 Gladioli, 73, 221; early, 227
 Gloire de Santheay, 235
 Gloriosa superba, culture of, 192
 Grasses, ornamental, 72
 Gooseberry caterpillar, 87, 112
 Greenhouse and stove plants, 116; construction, 277; creepers, 255; plants, 184
 Greenhouses, 152
 Gunnera scabra, 6
 Hardy fern varieties, 260
 Hebeclinium atro-rubens, 126
 Halleborus dumetorum, 130
 Henriette Dubus (rose), 237
 Herbaceous plants, 107
 Hereman on vine and fruit-tree culture, 107
 Hollyhocks, 68, 220
 Holly in need of pruning, 87
 Humata pedata, 218
 Hyacinth, a white bedding, 112
 Hyacinths, out of bloom, 68, 72, 160; new, 65; older, 66; our own selection, 242; a poor man's selection, 243
 Hybrid perpetual roses, 250
 Hydrangeas, 231
 Hydrolea spinosa, 122
 Hydropult, the new garden engine, 109
 Hymenodium crinitum, 216, 218
 Hymenolepis spicata, 216
 Iris, notes on the, 226
 Ixias, sparaxis, tritonias, Babilianas, early gladioli, antholyzas, Watsonias, etc., 227
 Jackdaw in a garden, 135
 January, work for, 13
 July, work for, 158
 June, work for, 134
 Lace leaf plant, 93
 Ladybirds, 225
 Lapageria rosea, 126
 Lastrea opaca (fern), 157
 Lawn-mowers, 151
 Lawton blackberry, 111
 Laying out little gardens, 24
 Lilioms in pots, 232; with spotted leaves, 112; culture of, and selection of species and varieties, 265
 Lily of the valley, bed of, 278
 Limncharis Humboldtii, 121
 Lime as a manure, 255
 Linum monogynum, 82
 Little greenhouse, 96
 Little gardens and flowery windows:—Introductory, 23; laying them out, 24; planting them, 26; outdoor ferneries, 49; planting under trees, 49; walls, 50; rustic-work, 50; bedding plants, 51; manures, 76; tools or implements, 77; the window, 77; fern cases, 95; the little greenhouse, 96
 Lobelia speciosa kermesina, 125
 Lomaria crenulata (fern), 157; attenuata, 218
 London roses, 247
 Louise Darzans (rose) 237
 Lygodium scandens, 216
 Madam Boll (rose), 236
 Madam Boutin (rose), 236
 March, work for, 61
 Marechal Vaillant (rose), 235
 Manures, 76
 May, work for, 103
 Melons, pit for propagating, 276
 Memorial of the Exhibition of 1851, 17
 Mice traps, 64
 Microlepis strigosa (fern), 157
 Midland and Northern Rose Show, 63
 Monte Christo (rose), 237
 Mosses in a fernery, 111
 Multum in parvo, 68
 Musgrave's slow combustion stove, 279
 Myrtle fences, 88
 Neapolitan violets and lilies of the valley, 87
 Nelumbium speciosum, 121
 Nemophila atomaria oculata, 82
 Nerine coccinea, amaryllis for window culture, 244
 Notes by the way: foliage bedders, 126; stuff, 127; flower shows at home, 128; Pickard's plant case, 128; propagating roses, 129; plants recommended, 130
 Notes for lady gardeners, 100
 Notes from Torquay, 86
 Notes for the garden, 12, 39, 61, 83, 134, 152, 181, 217, 229, 252, 276
 Notre Dame de Fourvieres (rose), 236
 November, work for, 252

- Nymphæa cærulea*, 122
 October, work for, 229
Oenothera Lamarckiana, 82
Oenothera multicaulis, 82
Olea fragrans, 72
 Orchard houses for tropical fruits:—I. Oranges and lemons planted out, 7; II. Oranges and lemons (continued), 37
 Orchids, cultivation of tropical, in the open air, 246; suspended, 247; in pots, 247
Onoclea sensibilis, 130
 Oxalis, culture of, 271
Oxalis Bowei, 271; acetosella, 272; corniculata, 272
 Palmette training of the peach, 239
 Pansy, the, 192
Papyrus antiquorum, 122
Parkeria pteroides, 122
 Peach trees, potted, 16; diseased, 255
 Peach, palmette training of the, 239
 Pear, culture of the, 21; points of special interest in the culture of the, 146
Pelargoniums, 116, 179
Petunias, 180; a selection of, 120
Pharbitis Learii, 82
Phlebotidium sporocarpum, 218
Phlox Drummondii Wilhelm, 82
 Picard's plant case, 128, 263
 Planting little gardens, 26
 Plants, notes on useful, 125
 Plants, protected by atmospheric air, 1
Pleopeltis membranacea, 216
 Plum, culture of the, 171
 Plums, select list of, 173
Polypodium glaucum, 218; vulgare, 263; V. Cambri-cum, 263
Polystichum flexum (fern), 157; setosum, 157
 Pomegranate, 7
 Potted peach trees, 16
Pontederia crassipes, 122
 Potting, how performed, 79
Praire de terre noire (rose), 237
 Prince Consort, death of, 3
 Prince Camille de Rohan (rose), 237
 Profitable gardening: Chap. xxiii. culture of the pear, 21; Chap. xxiv. points of special interest in the culture of the pear, 146; Chap. xxv. culture of the plum, 171
 Professor Koch (rose), 235
 Propagating case, 16, 18; method of heating, 64
 Propagating bedders, roses, ferns, 33
 Propagating roses, 129
Pteris serrulata, 217; tri-color, 218; flabellata, var. crispa, 218
 Quinces, 16
 Ransome's patent imperishable stone, 135
 Reason why, the, 111
Rhododendrons, 91, 115; in pots, 84
 Rooks, 224
 Rose catalogues, 266
 Rose leaves, spotted, 111
 Roses, 31, 116, 139, 231; list for amateurs in gradations of colour, 32; propagating, 33; at W. Paul's nursery, 67; how to make them propagate themselves, 70; dropping their blooms, 85; new, at Messrs. Fraser's nursery, 101; new, 175; in pots, 183; for Carmarthen, 184; summer, 190; notes on new, 196; new, 233; London, 247; for town gardens, 250
 Rose reminders, 143
 Rose season, resume of the 195
 Royal Horticultural Society Exhibitions for 1862, 17
Sagina procumbens, 63
 Sale of cuttings, 20
Salvia patens, 205
Salvias, 159
Saponaria calabrica alba 8
 Scale, 231
Scarabeus melolontha (cockchafer), 224; horticola, 224
Scolopendrium vulgare (fern), 260
Scrophularia nodosa variegata, 125
Selaginella apoda, 218
Senateur Vaisse (rose), 235
Senecio elegans Magenta, 82
 September, work for, 207
 Shrubs, a bed of ornamental, 207
 Siliceous stove, patent, 162
 Skeleton leaves and floral vignettes, 14
 Slow combustion stove, Musgrave's, 279
 Slug traps, 64
Souvenir de Lady Eardley (rose), 235
Sparaxis, 227
Spergulas, 149
Spergula pilifera, 112
Spergula saginoides, 149
 Sparrow shooting, 137
 Sphagnum, 88
 Spotted rose leaves
Statice brassicæfolia, 82
 Stone, substitutes for, 161
 Straw, dry, a non-conductor of heat, 1
 Stuff for potting, 127
 Summer roses for town gardens, 250
 Tea-scented roses, 252
 Temple Gardens, culture of the chrysanthemum at the, 4
Thalictrum anemonoides, 199
 Tiles, edging, 45
Todes pellucida, 217
 Tools or implements for the garden, 77
 Town gardening, 136; experiences in, 55
 Town gardens, summer and autumnal roses for, 250
 Trellis of wood and iron for peach, 242
 Trenching, 231
Triomphe d'Amiens (rose), 237
Tritonias, 227
Tropæolum tricolor, 64
Tropæolum, Crystal Palace Gem, 82
 Tropical fruits, orchard houses for, 7
 Tulip, the necessity of drainage in its cultivation, 228
 Tulip Society, Amateur, 133
Turenne (rose), 236
 Twelve espalier plums, 174
 Twelve orchard standard plums, 174
Vallisneria spiralis, 122
 Variegated leaved plants, 116
Victoria Regina, 122
 Ventilation, costless, 124
 Villa gardens near towns, 185
 Vine bleeding, 63

- | | | |
|---|---|---|
| Vine and fruit-tree culture, 107 | Waltonian case, 84, 86 | Woodwardia orientalis, 157 |
| Vinery, early forcing, 118 | Wanstead loam suitable for amaryllis, 245 | Work of the season, purchasing plants, 103; bedding out, 104; good old bedders, 105 |
| Viola tricolor, 72 | Watsonias, 227 | Xiphium, or Spanish iris, 227 |
| Wall of greenhouse, plants for, 88 | Weather, the, 73 | Young gardener's educator, 223 |
| Wall trees, failure of, 278 | Welwitschia mirabilis, 20 | Zicha, treatment of, 278 |
| Walls, construction and furnishing conservatory, 79 | Window, the, 77 | Zinnia aurea Lindl., 83 |
| | Woodsia polystichoides (fern), 157 | |

INDEX OF ENGRAVINGS.

- | | |
|---|--|
| Asplenium palmatum, 217 | Model stands for potted trees, 10, 11 |
| Athyrium filix femina, var. frizelliae, 262 | Orchard-house, 8 |
| Berberis Hookeri, 167 | Orchard-house, section of, 269 |
| Berberis Jamesonii, 166 | Peach, palmette form, first and second years, 238; third year, 239; fourth year, 240; fifth year, 241; trellis of wood and iron for, 242 |
| Davallia canariensis, haresfoot fern, 48 | Pickard's patent plant case, 129, 263 |
| Dielytra cucullaria, 198 | Propagating apparatus, 19 |
| Dinner-table decorations, 169, 170 | Propagating boxes, 34 |
| Edging tiles, 46 | Roses, illustrations of propagating, 70, 130, 141, 143 |
| Exhibition flower-stand, 128 | Thalictrum anemonoides, 199 |
| Fernery at Abbey Gardens, Ramsey, 189 | Ventilator, 125 |
| Floral vignettes and skeleton leaves, 14 | Vinery, section and ground plan, 119 |
| Hollyhocks, Sulphur Queen, and Galen, 69 | |
| Hymenodium crinitum, 216 | |
| Lace leaf plant, organs of fructification, 93 | |
| " " tank for culture, 95 | |
| Method of heating pits, 277 | |

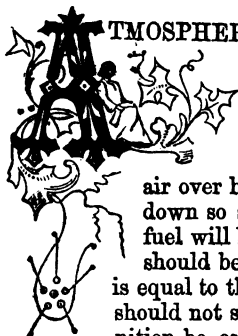
THE

FLORAL WORLD

AND

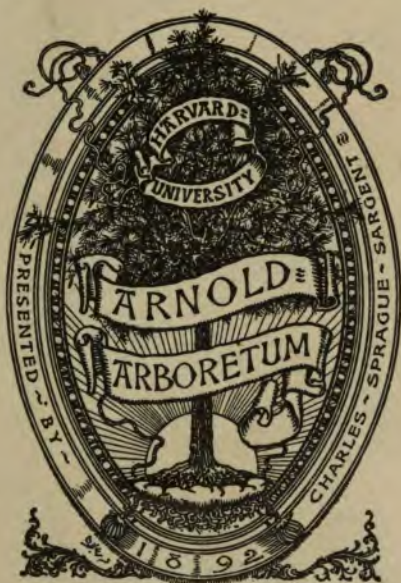
GARDEN GUIDE.

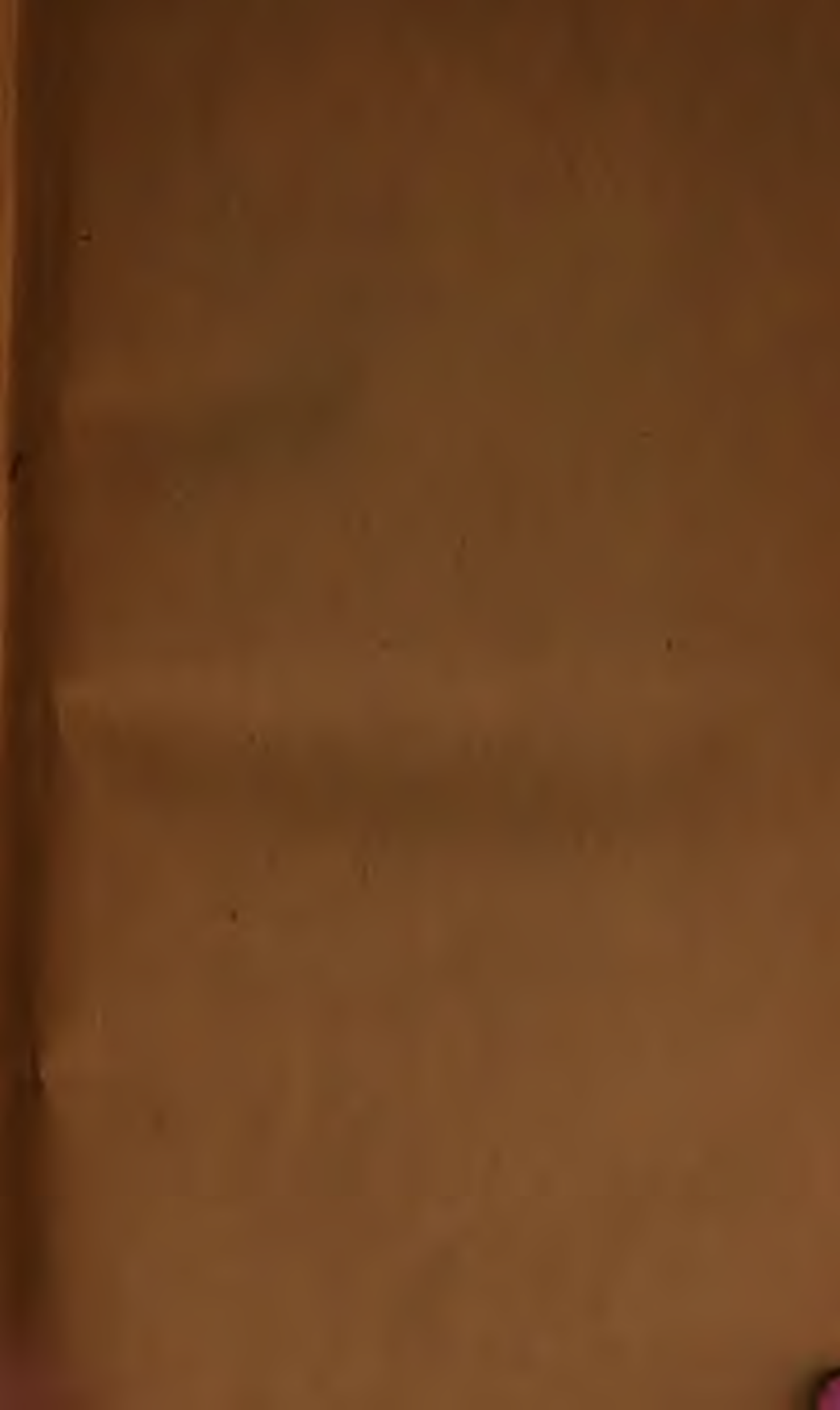
JANUARY, 1862.



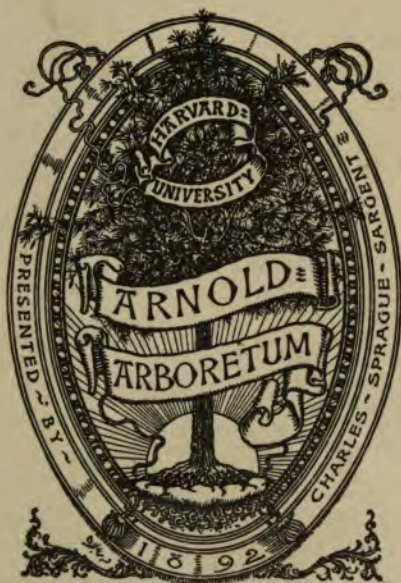
ATMOSPHERIC AIR is such a bad conductor of heat that there can be no more effectual protector of plants against frost: the difficulty is how to use it for that purpose. But, apart from that difficulty, every gardener should keep in mind, especially at this time of year, that if he can only imprison a stratum of air over his frames, houses, and pits, those inclosures will cool down so slowly during frost that the plants will be safer and fuel will be saved. In laying on protecting material, the fact should be regarded as the key to efficiency, for a stratum of air is equal to the warmth of a blanket or a thatching of straw. Why should not such a simple fact be turned to account, and its recognition be established as the first principle in the protection of plants against frost? That it is not, is owing, we suppose, to the too general habit of acting without thought, for, indeed, the security that results from protection well managed is chiefly owing to presence of this atmospheric air, though when it is accomplished, the philosophy of the matter is not always clearly seen. In covering a pit, a quantity of *dry* straw laid on loosely and covered with a tarpaulin, will preserve an equable temperature in the pit for a great length of time during very severe frost, whereas *wet* straw, pressed down close and covered with a material absorbent of moisture, would soon betray the contents of the pit to the weather, and be almost worse than no covering at all. What makes the difference? In the first case, the *dry* straw is itself a non-conductor, and being laid on loosely, it has entangled in its mass a large amount of atmospheric air, which cannot easily escape on account of the covering of impervious material above it. Thus, before the atmosphere of the pit can cool down, the difference between its temperature and that of the external atmosphere must pass through the stratum of non-conducting material lying between it and the tarpaulin, which process will take place so slowly that during a long continuance of frost the plants will be safe. In the second case, the *wet* straw is a tolerably good conductor, the presence of moisture invariably raising the conducting power of bodies both in regard to heat and electric-

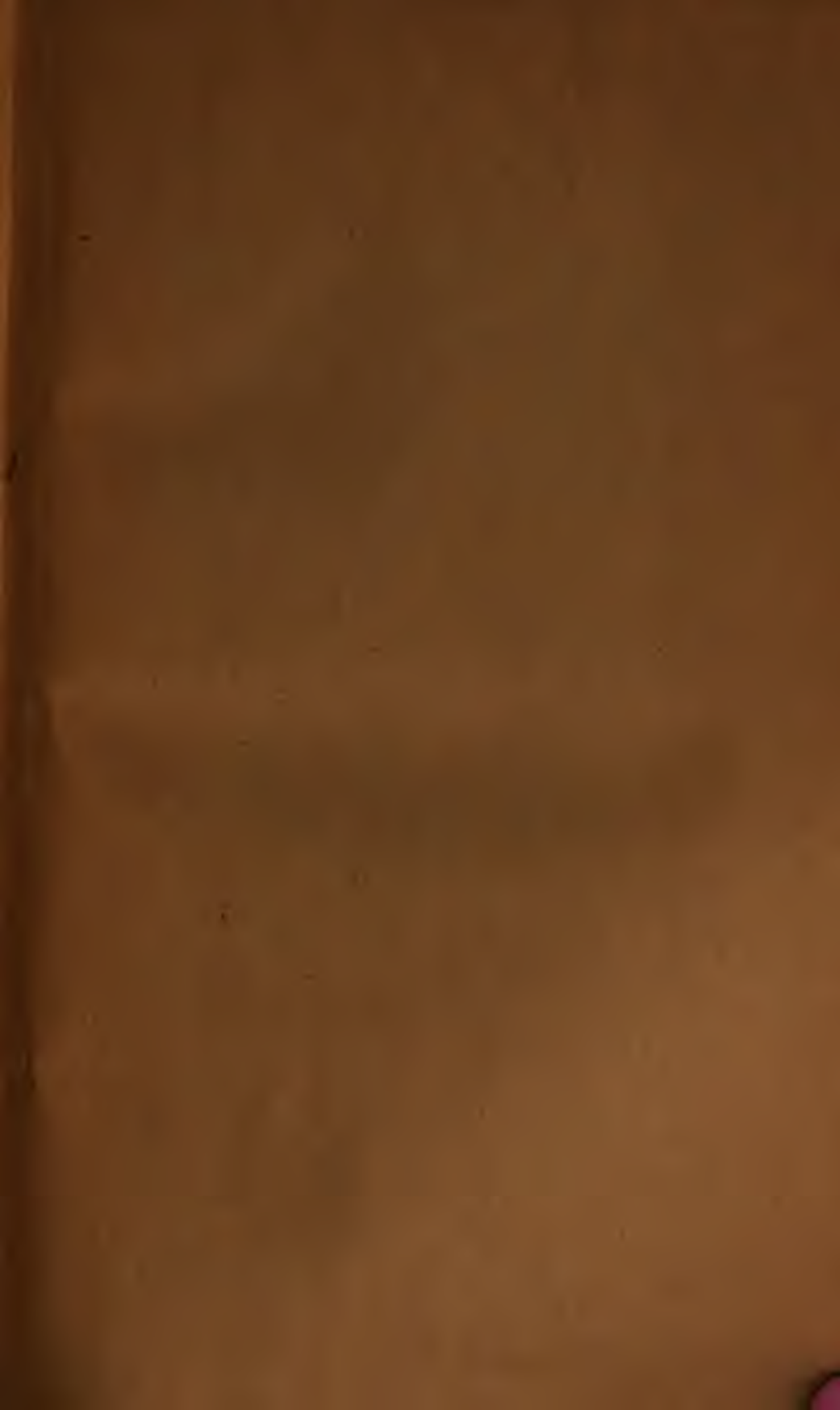
Per BI
53



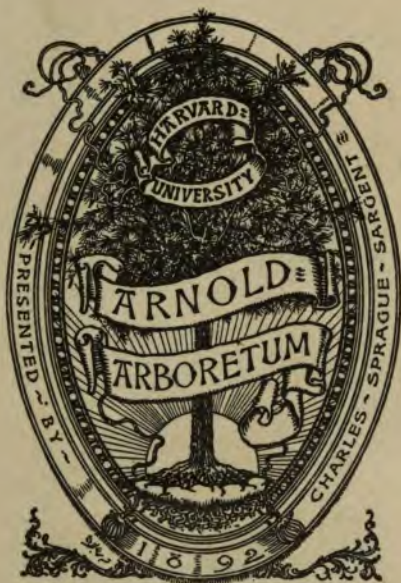


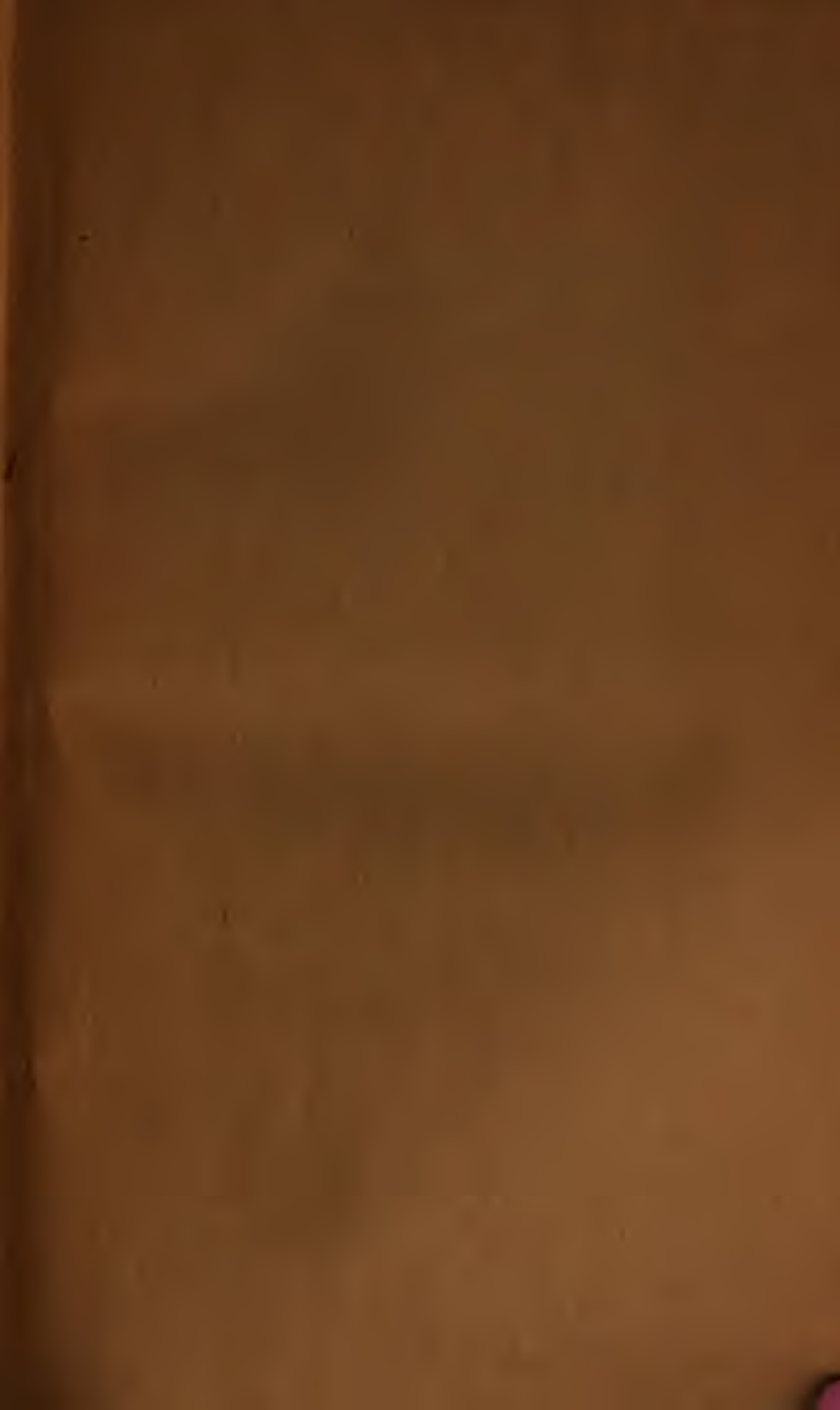
Per BI
53



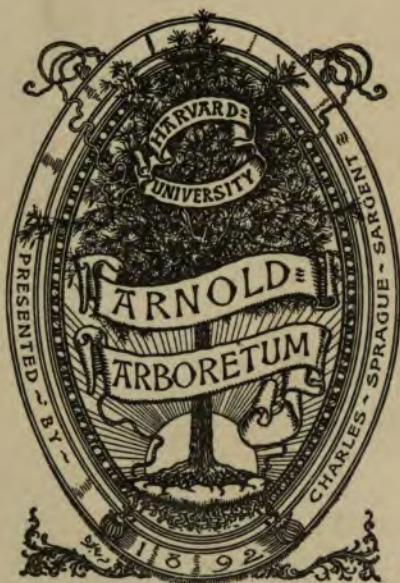


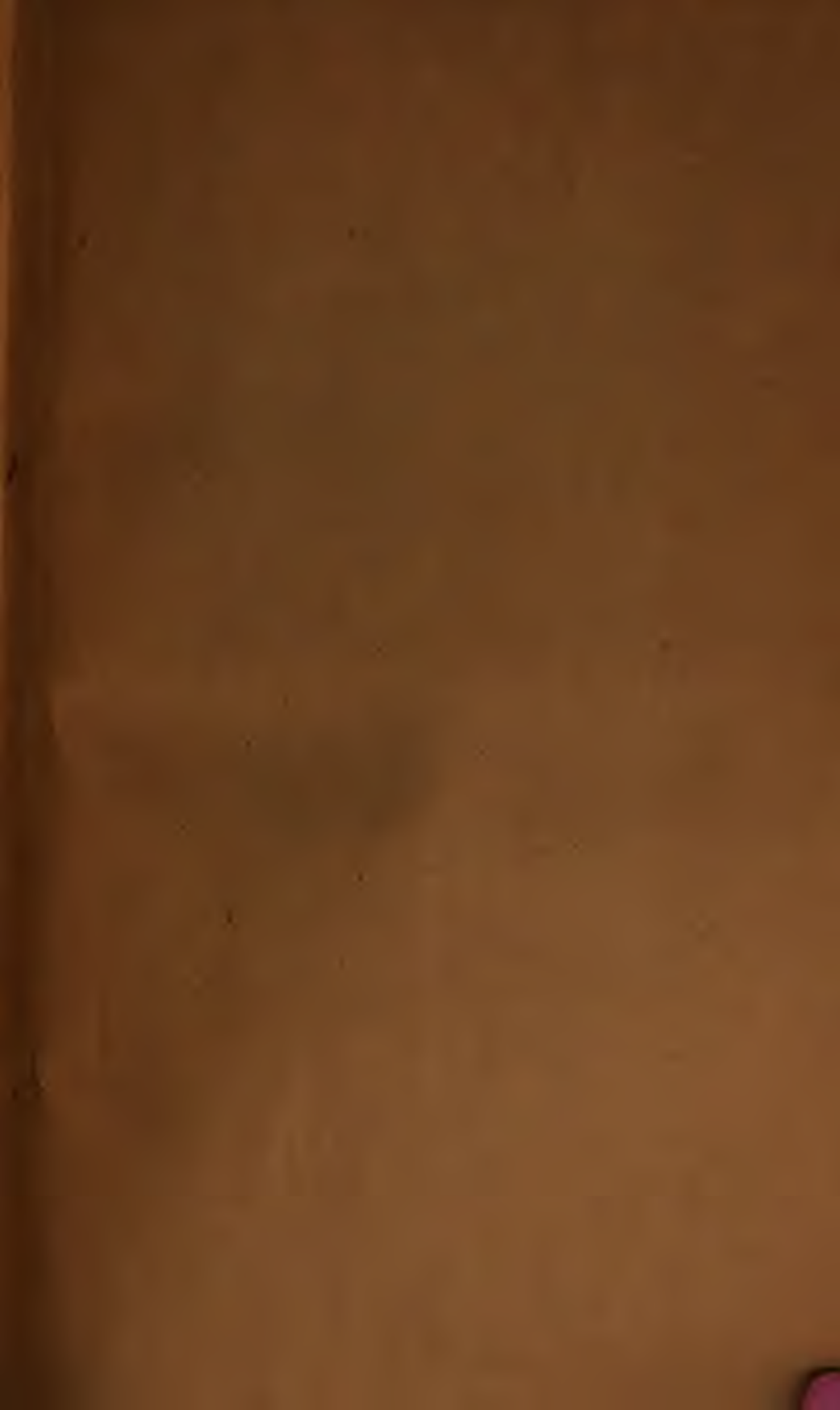
Per BI
53

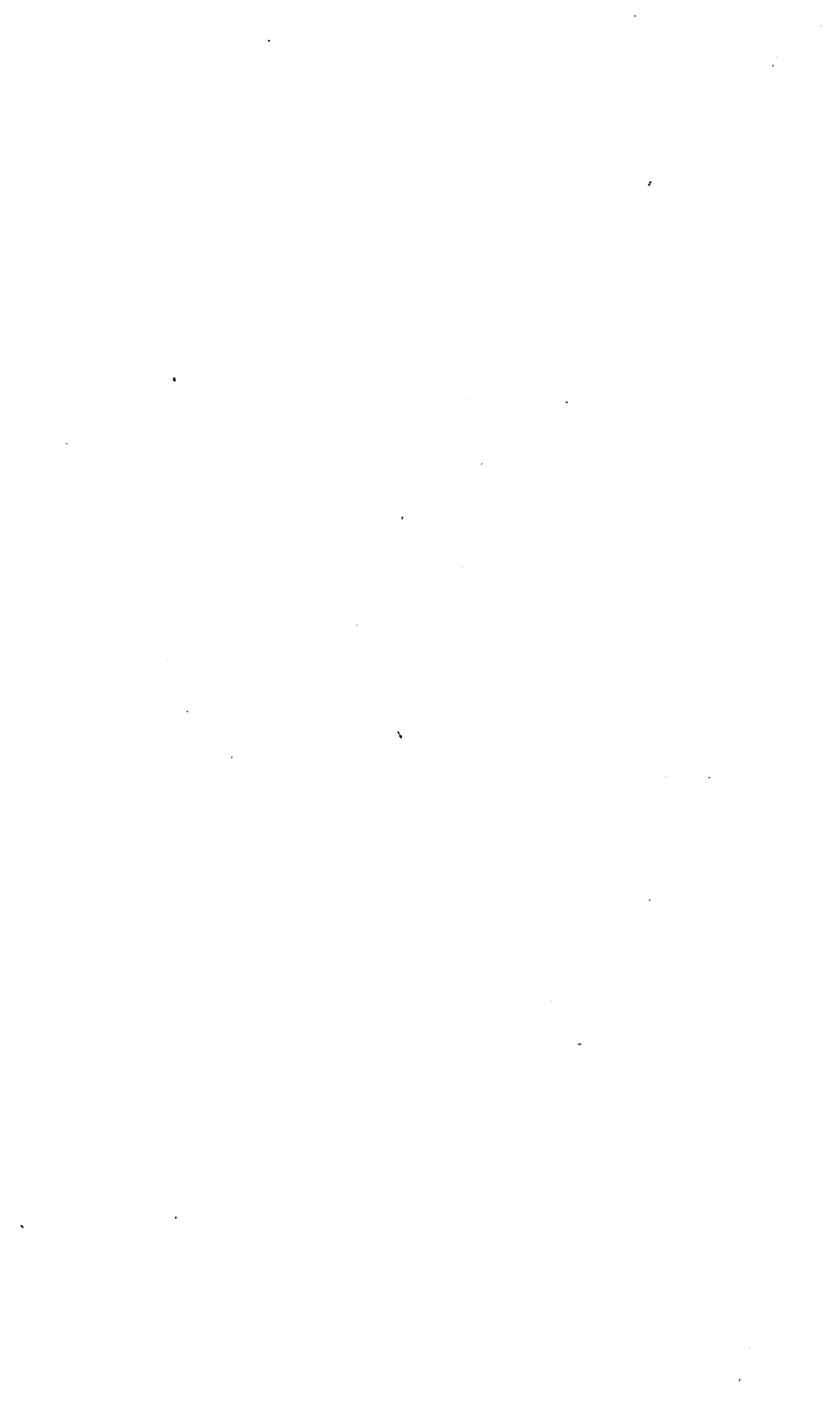




Per BI
53







#

THE
F L O R A L W O R L D

AND
GARDEN GUIDE.

~~~~~  
VOLUME V.  
~~~~~

LONDON:
GROOMBRIDGE AND SONS
5, PATERNOSTER ROW.
1862.

	1860.	1861.		1860.	1861.
Crocus, yellow	In blossom before the end of April.	Feb. 20	Lily of Valley	May 25	
Snowdrop		Feb. 7	Sweet William	"	June 6
Violet		Jan. 10	Aceras anthropophora	"	May 29
Vinca major		Mar. 9	Ceanothus azureus	"	
Cydonia Japonica		Feb. 28	Ornithogalum latifolium	May 26	May 26
Laurustinus		Jan. 1	Anchusa Italica	May 28	May 14
Euphorbia, digitate		Mar. 3	Nemophila insignis	"	May 17
Primrose, yellow		Jan. 27	Peony, double crimson	May 29	May 23
Corchorus Japonicus		Apr. 5	Valeriana rubra	"	May 14
Virginian Stock			Pink, double white	"	May 23
White Alyssum		Jan. 10	Aristotelia	May 31	May 17
Linaria cymbalaria			Scilla Peruviana	"	
Heart's-ease		Jan. 15	Papaver bracteatum	June 1	May 14
Ceanothus rigidus		Feb. 25	Coronilla	"	"
Auricula		Mar. 17	Oxalis floribunda	"	May 15
Anemone, scarlet		Apr. 10	Melittis grandiflora	June 4	May 23
Cowslip			Snowberry	June 13	"
Oxlip		Jan. 27	Escallonia macrantha	June 2	May 26
Narcissus biflorus			Iris sambucina	June 2	May 28
Gentiana acaulis		Apr. 18	Delphinium formosum	"	May 30
Polyanthus		Mar. 3	Mimulus quinq. vulnere	June 16	May 31
Primrose, double lilac	About 1st May.	Jan. 27	Allium flavum	June 1	
Daisy, double white			Lobelia speciosa	June 4	May 21
Berberis Darwinii		Apr. 4	Sweet Pea	June 6	
Forget-me-not			Glancium lateum	June 8	
Purple Vinca			Syringa	"	
Common wallflower		Jan. 27	Enothera longifolia	"	June 5
Hieracium denticulatum		Apr. 30	Antirrhinum majus	"	June 18
Clematis montana		Apr. 16	Gladiolus Byzantinus	June 10	June 8
Lotus corniculatus		May 19	Dianthus Chinensis	June 19	June 2
Phlox verna		Apr. 24	Leycesteria formosa	June 13	"
Wallflower, double yellow		Apr. 16	Lonicera brachypoda	June 30	June 3
Dielytra spectabilis		Apr. 27	Escholtzia crocea	June 19	June 5
Saxifraga crassifolia		Mar. 24	Iris pseudacorus	"	"
Tulip, single		Mar. 21	Rose, double Burnet	June 24	June 6
Narcissus, white			Lysimachia nummularia	"	June 9
Orchis mascula		Apr. 22	Aconitum napellus	July 18	June 10
London Pride Saxifrage		Apr. 27	Martagon rubrum	"	"
Erysimum Pauloffskianum			Fuchsia elegans	"	"
Gentiana verna			Nymphaea alba	June 13	July 18
Hyacinthus non scriptus	From 1st to 13th May.	May 4	Stock, double	June 17	
Papaver Cambricum		May 1	Senecio elegans, double	"	
Tulip, Van Thol		Mar. 12	Sedum Anglicum	"	June 19
Winter aconite		Apr. 8	Peony, white	June 19	
Alyssum saxatile		Apr. 10	Iberis, purple	"	June 19
Laburnum		May 16	Heracleum giganteum	"	June 11
Thrift		"	Campanula persicifolia	July 5	"
Weigela rosea		May 18	Digitalis purpurea	June 30	June 12
Wistaria Sinensis		"	Honeysuckle, Dutch	June 24	June 13
Allium ursinum		"	Phlox Drummondii	"	"
Scilla verna		"	Veronica arguta	June 30	June 14
Ceanothus dentatus		May 20	Delphinium Chinense	July 14	"
Lilac		"	Sweetbrier	July 6	June 15
Limnathes sulphureus		"	Spiræa filipendula	"	"
Rose, Monthly		May 23	Brizopyrum siculum	"	"
Aquilegia vulgaris		"	Mignonette	June 24	"
Geum coccineum		"	Canterbury Bell	July 5	June 18
Veronica spicata		"	Agrostis nebulosa	"	"
Fumitory, yellow		June 2	Enothera Fraseri	July 6	June 19
Helianthemum polifolium		May 1	Periploca Græca	July 4	"
Rocket, single		May 5	Cuphea platycentra	June 30	"

	1860.	1861.		1860.	1861.
Rose, white Ayrshire . . .	July 11	June 22	Lathyrus latifolius . . .	"	July 1
Sedum acre . . .	June 24	"	Calampelis scabra . . .	July 1	July 2
Spiræa ulmaria . . .	"	June 25	Iris xiphioides . . .	"	July 3
Salvia fulgens . . .	"	June 26	Nattalia pedata . . .	"	"
Glaucium violaceum . . .	"	June 28	Sedum reflexum . . .	"	July 5
Linum rubrum . . .	July 18	June 29	Commelina cœlestis . . .	"	July 8
Hemerocallis fulva . . .	July 6	June 30	Echium vulgare . . .	"	"
Clematis Hendersonii, purple . . .	July 25	"	Potentilla atrosanguinea . . .	"	July 11
Oenothera Missouriensis . . .	"	"	Tagetes erecta . . .	"	"
Jasminum fruticans . . .	June 24	"	Lupinus polyphyllus . . .	"	"
Orchis pyramidalis . . .	"	"	Hollyhock . . .	"	July 12
Ophrys apifera . . .	July 2	"	Gaillardia picta . . .	"	"
Pentstemon, scarlet . . .	July 4	"	Ipomœa coccinea . . .	"	July 13
Briza maxima . . .	"	"	Erysimum Arkansanum . . .	"	July 14
Lilium aurantiacum . . .	July 11	"	Fuchsia serratifolia . . .	"	July 15
Lilium candidum . . .	"	"	Ageratum album . . .	"	July 16
Lonicera flexuosa . . .	July 13	"	Zinnia elegans . . .	"	"
Hypericum calycinum . . .	July 14	"	Lupinus subcarnosus . . .	"	"
Flowering Raspberry . . .	"	July 30	Salvia patens . . .	"	July 18
Convolvulus minor . . .	July 18	"	Lupinus magnificus . . .	"	July 19
Jasminum ochroleucum . . .	"	July 8	Phlox, white . . .	"	July 20
Carnation . . .	July 25	July 12	Dianthus laciniatus . . .	"	"

NOTES FOR THE GARDEN.

KITCHEN GARDEN.—Ridge up to the frost any vacant plots from which winter crops have been removed. In hard weather, wheel manure on to the plots intended for spring crops. Put a heap of half-rotted dung over every stool of rhubarb, and, if you have no conveniences for forcing, put old boxes, or large flower-pots over a few of them, and cover all up with horse-dung, to get a supply of early shoots. If you have a hot-bed, cover the dung with four inches of soil, and take up a lot of strong roots, of asparagus, sea-kale, and rhubarb, and put them in pretty close together, and cover with leaves, and you will soon have a supply. Asparagus should never be thoroughly blanched, but allowed to green at the points, and it should be cut before it attains to the length in which it usually comes to the market. Protect celery with loose litter, and keep it well earthed up. Look over the stock of cauliflowers, lettuces, etc., in frames, to see that they are not suffering from damp or too close confinement. In severe frosts, put tarpaulin over the frames, which is unattended with the litter caused by thatched hurdles and most other means of protecting. Sow early peas on sheltered slopes, and broad beans where they are to stand.

FRUIT GARDEN.—Pruning, if not yet completed, should be pursued without delay. Plant any fruit trees that may still be required, but be careful not to dig in about their roots any portion of frozen soil. This is a good time to dress fruit walls with a wash of lime and gas tar, as described in No. 7 of the FLORAL WORLD. Peaches, and other tender trees that are in situations exposed to east winds, should be unnailed, so as to keep them back, the warmth of the wall having a tendency to make them push early, and so suffer hereafter from spring frosts.

FLOWER GARDEN.—If any bulbs remain out of the ground, get them in at once, and where they

can remain till they have finished their summer growth. It would not be wise to plant any at the late season where it will be necessary to remove them immediately after flowering. Tulips and hyacinths should be kept from freezing, if possible; though notoriously hardy, these never flower so well as when protected from severe frosts; but otherwise they should have as much air and exposure as possible. Beds that are exposed to the morning sun should be watered with cold water very early, when the foliage has been frozen in the night. Auriculas, polyanthus, carnations, etc., should have air in mild weather, and be kept growing by regular waterings, and even during severe frosts should never become dust dry. Get ready the beds intended for ranunculuses and anemones to be planted next month.

GREENHOUSE AND STOVE.—Gently force early blooming shrubs for decoration, such as double flowering prunus, peach, etc. Kalmias, azaleas, camellias, rhododendrons, lilacs, daphnes, roses, etc., may be got into early bloom with a very moderate heat, if the wood was well ripened last year. Jasminum nudiflorum is a charming conservatory plant this month. In the preservative pit be content just to keep out frost and no more, till the end of the month, when a general start may be made of all stock required for bedding out. Fuchsias, cinerarias, primulas, and cycluses will be coming into bloom, and must be closely watched that green-fly does not get hold of the tender shoots. Keep succulents quite dry. In the stove, Poinsettia pulcherrima and Euphorbia jacquiniiflora may be pushed into flower, and achimenes and gloxinias put in heat for early blooming. Temperature:—Greenhouse, 40° to 46° at night, 50° to 55° by day; stove, 55° at night, to 60° and 65° by day.

FLORAL VIGNETTES AND SKELETON LEAVES.

Our fair readers, who are now compelled to pass at the fire-side many of those hours which at other seasons are devoted to the garden and botanical rambles, may find agreeable occupation and a delightful opportunity of exercising their invention and taste in preparing floral vignettes for the sheets of note paper on which they write to their friends. Our valued correspondent, Mrs. E. Duff, of Henley-on-Thames, usually favours us with one of these pretty vignettes at the head of each of her letters, and it is hard for us to say which affords the most delight, the kind expression of her friendly regard or the elegant produce of her tasteful handiwork. We call them "floral vignettes" for want of a better term ; they are, in fact,

rous similar examples are before us ; minute leaves of umbelliferous plants, lycopodiums, ferns, flowers of hawkweed, celandine, dock, etc. etc.

Yellow flowers preserve their colour best of any ; young leaves having a purple or bronze tinge, as those of the common yarrow, are also useful to give colour ; in fact, anything elegant in outline may be used, a few days' pressure between folds of clean blotting paper being sufficient to dry them for the purpose.

With these vignettes, we have received from Mrs. Duff, with permission to use her name, samples of skeleton leaves prepared by a process which occupies but a few minutes. The leaves are dried by



groups of dried leaves and flowers, mounted on the paper with gum, and disposed so as to form a wreath, a bouquet, or a group of gracefully negligent fern-leaves and mosses. The one here figured is a facsimile of the heading of a note received from Mrs. Duff not long since. It consists of leaves and flowers all admirably adapted for association. In the centre is a small leaf of English ivy, on the right hand of which is a small rose-leaf ; above that is a tendril of leaves of wild vetch ; in the centre above the ivy leaf a frond of maiden-hair fern ; then a sprig of moss, next on the left a blossom of *Veronica chamaedrys*, or speedwell ; then a sprig of grass ; moss again, and a few odd leaves to fill in with. Num-

placing them flat in a botanical drying press, or between folds of blotting-paper under a weight ; when quite dry, the leaf to be operated on is then placed on a soft pad, or wanting that, on a duster, doubled six or eight times, and is then beat with a brush, when all the softer portions fall out, and leave a complete and beautiful skeleton. A clothes'-brush and a chair-cushion comprise all the implements necessary for a first attempt ; after which, those who love such pursuits will devise means for accomplishing the purpose more conveniently. The samples sent are as perfect as those obtained by the process of maceration, but they are not bleached.

S. H.

JANUARY, 1862.

PHASES OF MOON.—First Quarter, 7th, 10h. 47m. even. ; Full, 16th, 1h. 55m. morn. ; Last Quarter, 23rd, 6h. 37m. morn. ; New, 30th, 2h. 49m. morn.

31 Days.				Weather near London, 1861.				THE COUNTRY.			
M D	W D	Sun rises	Sun sets.	BAROMETER Mx. Min.		THERMOM. Mx. Mn. Me.			Rain	Rural Signs and Sounds.	
		h m.	h m.								
1	W	3 9	35 9	29.691	29.122	44	24	31.0	.00	Fronde on hymenophyllum appear	
2	Th	8 8	4 0	30.122	29.948	33	18	25.5	.00	Acheta domestica chirps	
3	F	3 8	4 2	30.254	30.177	31	12	21.5	.00	Yellow tremella on palings	
4	S	3 8	4 3	30.138	30.009	37	26	31.5	.00	Tortula muralis spores	
5	Su	8 7	4 4	30.037	29.094	34	13	23.5	.00	Mosses abundant	
6	M	8 7	4 5	30.069	30.013	32	14	23.0	.00	Titmouse and thrush sing	
7	Tu	8 7	4 6	30.146	30.031	32	10	21.0	.00	Linnets congregate	
8	W	8 6	4 8	30.263	30.221	37	6	21.5	.00	Buntings in flocks	
9	Th	8 5	4 9	30.297	30.217	38	8	23.0	.00	Fieldfares and redwings near rivers	
10	F	8 5	4 11	30.380	30.270	23	9	16.0	.00	Groundsel flowers	
11	S	8 4	4 12	30.317	30.184	35	19	27.0	.00	Dead-nettle flowers	
12	Su	8 3	4 13	30.140	29.922	40	31	35.5	.00	Flights of starlings	
13	M	8 2	4 15	29.758	29.633	34	22	28.0	.10	Gold-crested wren	
14	Tu	8 2	4 16	29.801	29.635	31	25	28.0	.00	Helix virgata on grass	
15	W	8 1	4 18	30.027	30.001	31	21	26.0	.00	Scotch crocus	
16	Th	8 0	4 19	30.144	30.089	29	25	27.0	.00	Umbelliferous plants grow	
17	F	7 59	4 21	30.291	30.201	37	30	33.5	.01	Helix nemoralis appears	
18	S	7 57	4 23	30.244	30.170	37	29	33.0	.00	Winter aconite flowers	
19	Su	7 57	4 24	30.194	30.137	40	30	35.5	.66	Mountain bulimus	
20	M	7 56	4 26	30.378	30.220	46	34	40.0	.00	Skylark sings	
21	Tu	7 56	4 37	30.423	30.376	44	28	36.0	.00	Poa trivialis flowers	
22	W	7 55	4 29	30.361	30.250	41	32	36.5	.01	Ulex nanus flowers	
23	Th	7 53	4 31	30.215	30.126	37	27	32.0	.02	Autumn lichens disappear	
24	F	7 52	4 33	30.021	29.988	48	39	43.5	.01	Earthworms lie out	
25	S	7 51	4 35	29.899	29.851	53	40	46.5	.02	Pilewort flowers	
26	Su	7 49	4 36	30.288	30.137	55	41	48.0	.04	Ivy begins to cast its leaves	
27	M	7 48	4 38	30.199	30.169	56	37	46.5	.01	Snowdrops	
28	Tu	7 47	4 40	30.200	30.000	56	25	40.5	.02	Bearsfoot flowers	
29	W	7 45	4 42	30.158	30.053	52	26	39.0	.02	Chaffinch sings	
30	Th	7 44	4 44	30.104	29.989	46	38	42.0	.01	White wagtail chirps	
31	F	7 42	4 45	30.129	30.089	56	30	43.0	.00	Nettle butterfly appears	

TO CORRESPONDENTS.

BRAMBLES AND BAY LEAVES" is now ready, and will be forwarded to subscribers through the post. Those who have not subscribed can obtain it in the usual way through their booksellers, or direct from the publishers, price 5s. As we cannot review the work in these pages, we must be content to introduce it to our friends as a volume of light reading, adapted to the season—we hope, indeed, for all seasons—and which will, no doubt, prove a most suitable work for a Christmas or New Year's gift. It comprises a selection of the author's essays on country scenes, rural occupations, the laws of nature, and the mysteries of life. The papers on the "Land of Blackberries," the "Story of a Blade of Grass," the "Happy Family," and

the "Soul in Nature," have become so well known that their reappearance in this volume will, no doubt, suffice to cause a rapid sale of the edition. But, besides these, there are several papers which will be new to the readers of Mr. Hibberd's works, as the "Rainbow," and "Fido Fides," in which an attempt is made to establish, by analogy and argument, the spiritual relations of man and brute to the source of all Being, and to all created things. Leaving the work to find its way into the homes of those who can heartily participate in the pursuits and meditations of the author, it will not be again referred to in these pages, unless some special reason for reference should become necessary.

PROPAGATING CASE.—The note which appeared on this subject in the December number was written by Mr. F. Boswell, of Regent's Park, and the signature, "K. Z.," was attached to it by mistake. The paper came, in fact, without any signature at all, and we concluded it to be from our former correspondent. We thank Mr. Boswell for the communication, and apologise for the attachment of the wrong initials. We have just received a letter from "K. Z.," which we cannot make room for in this number, but which will appear next month.

EARLY FORCING.—*Sub.*—In proportion to the heat should be the amount of moisture, as also the circulation of air. We infer from your statement that the atmospheric moisture is much deficient. Is there, however, any source of bottom-heat which produces atmospheric moisture? Roses, and, in fact, most shrubs, emerging from a state of partial torpidity or rest, are very averse to what is termed dry heat. Our advice is to use as much atmospheric moisture in the afternoon, in combination with a circulation of air, as will deposit dew on the leaves. A much less amount may be used from daylight until noon. Drab is a good colour to paint your house to show off vegetation; as to matters of cultivation, it is quite of secondary importance. The management of the atmosphere carries the chief weight. *Achimenes coccinea* cannot be got well through the winter—more light in conjunction with heat is wanted. Pot off some now, which were rested early; plunge them in bottom-heat without water; as soon as up, transfer them in groups to pots or pans, and cultivate as you would a balsam. Pot again once a month for succession, from those at rest. Plunge *geesnerias* in bottom-heat, and treat them as the *achimenes*. Use a little water, increasing it with increased vigour. Your temperature is rather too low; if sunshine occurs, run the glass up to 75° or even 80°; provided there is a little motion in the air. A cold greenhouse will suffice for *camellias*. The roots, after excitement, may suffer; why not plunge the pot in another, with a column of dry sawdust in the cavity? Give them a partial rest here for a month, then introduce them to your forcing-house, and they will bloom again next November and December.

CATALOGUES RECEIVED.—"Sutton's Spring Catalogue and Amateur's Guide for 1862. Sutton and Sons, Reading."—This deservedly popular annual has all its usual features of interest. The selections of seeds are few in number under each head, a great advantage to amateur cultivators, who are only bewildered when hundreds of sorts, scarcely differing, or not differing at all, are crowded in catalogues, so that it is impossible for them to judge which is best. The cultural notes are, of course, thoroughly practical, and founded on the routine of Messrs. Sutton's own experiences as producers of the goods they sell. In grass seeds, this house has for many years been celebrated, and it maintains its fame as ably as ever.—"Hooper and Co.'s Early Vegetable Seed Catalogue, Central Avenue, Covent Garden, London, W.C." This comprises kitchen garden and agricultural seeds for winter and spring sowing, and a list of bulbous plants for planting in spring, including anemones, ranunculuses, gladioli, etc. It is a short list and the better for being so, for it enumerates the best varieties of each section, and indicates in a few words their respective excellences. Such lists are useful, not only to guide purchasers in the selection of varieties for general purposes, but also to suggest other and newer subjects for cultivation, which might be forgotten till too late to be useful.

THE ROYAL BOTANIC SOCIETY has announced the dates of the ten meetings to be held in 1862. They are as follows:—Spring exhibitions on Wednesdays, March 26, April 2, 9, 16, 23, 30, and May 7. Then follow three grand exhibitions of plants, flowers and fruits, on May 28, June 18, and July 9.

POTTED PEACH TREES.—Y. Z., *Burlington.*—No dependence can be placed on peach trees for a crop of fruit this year, if the potting is delayed till February; and especially if they were taken up or out of pots in November last. When potted in November fruit trees begin to make new roots at once, and continue growing at the root all the winter, whereas if delayed till February, they are then beginning to start their buds, and there is not enough root-action established to enable them to carry fruit. The house will no doubt accommodate them well, if freely ventilated. Feeders are of use chiefly to supply more moisture to plants than they can have by ordinary watering. The Noblesse, Royal George, and Violette Hative are all first class peaches; the first is the most ornamental when in bloom, as it has large flowers, and it is also the best peach to choose for general purposes, as it is a constant bearer, and the fruit unsurpassed among peaches. Any oilman will supply floating wicks. They are sold under many names, but there are no essential differences.

ARTILLERY PLANT.—T. Colson.—M. E. W.—Each of these correspondents has sent specimens of *Pilea allitrichoides*, or Pistol plant. It is a native of the West Indies, and a very elegant and interesting subject for stove and greenhouse culture. We have frequently used it to furnish Wardian cases, for which purpose it must be grown to a good size in pots, and be plunged in the place it is to occupy, and it will continue to grow and bloom from May to October in the temperature of a dwelling room. The minute, fern-like leaves and reddish pine-head sort of blossoms, fit it well for association with fine leaved plants. It is named the Artillery or Pistol plant, because when sprinkled with water on a hot, sunny day, the flowers emit little puffs of pollen like discharges of smoke from fire-arms.

QUINCES.—*Westmorelander.*—You might try thorn and medlar stocks raised from seed. But we must confess that we have no experience in the working of the quince except as a stock having always grown on its own roots. This correspondent esteems the quince highly, but it does not thrive on its own roots in the part of Westmoreland from which he writes. He finds it do best on *Cydonia Japonica*. Can any of our readers suggest a suitable stock besides the *Cydonia* and the pear? We should be strongly inclined to give preference to the hawthorn for an experiment.

VARIOUS.—A. S.—We are not aware that Mr. T. has any agents anywhere. Why not send your order to him direct.—*Westmorelander.*—Galvanized wire will not be injured by a mixture of whiting and oil.—*Subscriber.*—Mignonette will do no harm growing in a vine border. The other query does not come within our province, except to say we have forwarded your note, and that the journal referred to is now conducted in a most respectable manner.—N. P. S.—See p. 28 of the volume for 1861, for culture of Pyramid pompones.—G. M.—Rough plate glass is a very serviceable material, and has never disappointed. Stephenson's Boiler will suit your purpose well. It is made by Dale and Son, 195, Upper Thames Street, E.C. These boilers are made of copper.—*Amateur.*—Your kind note is quite to the purpose.

THE
FLORAL WORLD
 AND
GARDEN GUIDE.

FEBRUARY, 1862.



THE Royal Horticultural Society has been specially favoured since the demise of its august President, so that, whatever difficulties the Great Exhibition of 1862 may have to contend against in consequence of the deeply-lamented death of Prince Albert, the utmost will be done to lessen the effects of the loss of his distinguished patronage of the Horticultural. The Queen has communicated to the Council her intention to carry out to the utmost of her ability the various undertakings of her late husband; and with this object in view, the influence of her royal favour will be exercised in every possible way to promote the interests of the Society, which she thus takes under her especial care. The patronage of her Majesty is, therefore, of no merely formal kind, it is henceforth to be real and active. The horticultural public are thus brought into a nearer relationship to our beloved Sovereign, and have provided a new occasion for grateful regard to her, so that in the pursuits of out-door life and in the progress of the art, our individual sympathies may mingle afresh in the remembrance of the heavy bereavement which has been the cause of this determination on the part of the Queen.

The Memorial of the Great Exhibition of 1851 is fast progressing towards completeness in the new garden at Kensington Gore. It had been determined, during the life of Prince Albert, to surmount the memorial with a statue of the Queen, but the aspects of the subject are changed, and the Prince of Wales has addressed a letter to the Council, offering to provide, at his own expense, a statue of Prince Albert, "from whose enlightened mind that great undertaking sprang." The Memorial Committee have, of course, agreed to carry out the proposal of the Prince, which is also in accordance with the wish of Her Majesty:

The exhibitions to be held by the Royal Horticultural Society this year, are as follows:—Wednesday, March 19th, Hyacinths, Camellias, and Cinerarias. Wednesday, April 9th, Azaleas. Wednesday, May 21st, the first great show, at which the inauguration of the Memorial of the Exhibition of 1851 will probably take place. Wednesday, June 11th, second

great show, with which will probably be combined a show of American plants by Messrs. Waterer and Godfrey. Thursday, June 26th, the Rose Show. Wednesday, July 2nd, the third great show. Wednesday, September 10th, autumn show of Dahlias, Hollyhocks, Asters, and Fruits. Thursday, Friday, and Saturday, October 8th, 9th, 10th, great international show of Fruits, Vegetables, Roots, Cereals, and Gourds. For the latter, several liberal prizes are offered with a view to bring together a most extensive collection of useful and ornamental Gourds to furnish data for their culture and selection for every purpose.

The National Tulip Society will hold a grand exhibition in the New Victoria Hall, Leeds, during May next, on a day to be fixed as soon as the probable nature of the season and the forwardness of the plants can be sufficiently estimated. Mr. Appleby and Mr. Dean are exerting themselves to insure a large gathering of growers from north, south, and midland districts; and we feel assured that nothing will be wanting in the management to render the undertaking successful. As the funds are to be raised on the ancient system of "voluntary contributions," we trust all tulip-growers who read this will consider quickly to what extent they can aid the enterprise, bearing in mind that the promoters will esteem a bird in hand as better than any number in the bush.

The Royal Botanic Society will hold three grand Exhibitions this year, the dates of which are to be May 28th, June 18th, and July 9th. There will also be seven Meetings for Spring Exhibitions, on Wednesdays, March 26th, April 2nd, 9th, 16th, 23rd, 30th, and May 7th. Among the Exhibitions to be held early in the year, it is with much satisfaction we hear that Messrs. Milne and Co., of Vauxhall Nursery, will have a fine show of Camellias; and Messrs. Cutbush will exhibit Hyacinths at their Home Nursery, Highgate.

The Royal Dublin Horticultural Society will hold a grand exhibition on the 17th of June, at which plants may be sold at the option of exhibitors.

THE PROPAGATING CASE.

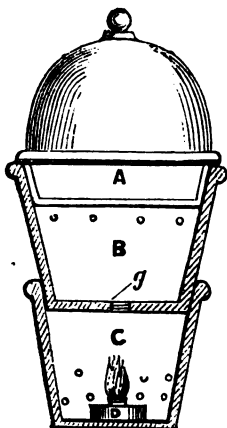
I HAVE no doubt you have felt some surprise that you have not heard from me in reply to your inquiries expressed in the November number of the *FLORAL WORLD*. The fact is, that I have been from home for some weeks, and when I returned I had so much to do that I could not give my individual attention to this matter; which was especially necessary, seeing that since I first sent my communication in *May last*, I had made several improvements in the construction and action of the lamps, which I was anxious fully to test, before I wrote to you upon the subject. Your December number has just come to hand (December 3), and it finds me engaged in testing the alterations to which I have alluded.

In this month's number of the *FLORAL WORLD*, I find some one disposed to quench my lamp by pouring cold water upon it;

he seems to think it's "a great to do about nothing:" his experience is, that anything would do so long as it has simplicity on its side; *ergo*, an old woman's rushlight stuck into a clay candlestick; nothing could be more simple, nothing more economical, if it answered the purpose. He then talks of an antiquated affair which I remember when I was a very little boy, a floating light in a tumbler, an affair very similar to the rushlight and clay. The thought then appears to have struck him, that the measure and weight of the oil had something to do with the quality of oil and these somewhat too with the whole affair, and he winds the matter up by (doing what I presume he intended to do at the first) recommending Mr. Samuel Bonsor, of Oxford Street.

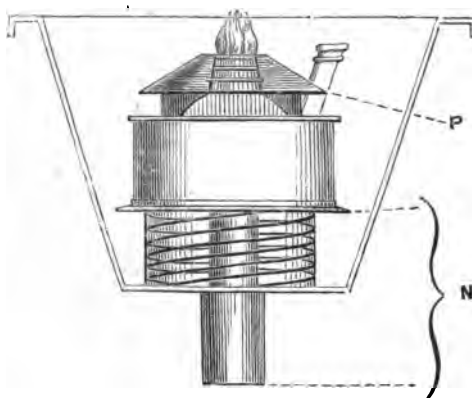
If your correspondent had merely said,

that it was possible to produce a certain effect even with the most common apparatus, I would agree with him, but to state



, saucer with sand, with bell-glass placed on ; B, a flower-pot with opening at bottom (g) for the heat to pass through ; C, a flower-pot containing lamp ; D, both pots pierced with air holes.

what he does is absurd. I flatter myself I have had some experience in experiments, and I had constructed, before I knew aught about the Waltonian case, a small propagating case with two flower-pots, one placed inside the other, with a small saucer



P, the cover for increasing the draught and steadying the flame ; N, the apparatus for raising the lamp as the oil is consumed. The lamp is here represented at its greatest height.

of sand upon the top, and a common chamber lamp at the bottom, which answered very well, after I had pierced the two flower-pots for a draught.

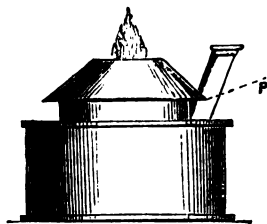
A common Child's night-light would answer every purpose ; of course such an apparatus would do for an emergency and a makeshift, but its operation would be very limited, and rather expensive, seeing that a box of six-hour night-lights (twelve in a box) would be consumed in three days, and cost 7d., so that the expense for a week would be from 1s. 2d. to 1s. 6d., much more than the cost of the oil consumed in my lamp, which effects a considerable result.

Your correspondent advocates the floating lights, for what I consider a great defect, and to overcome which I have spent some time and expended much thought. He says, "One great point in its favour is, that as the oil is consumed, the floats necessarily sink gradually lower," etc. I consider this a great defect. From the first I have found, especially in the mornings, that the lamp was burning dimly, and consequently the heat much diminished.

Well, so much for your correspondent.

Since I wrote to you, I have succeeded in improving my lamp. I have added a cover, which not only prevents the dust from falling in, but which supplies a current of air to the flame, so that it is very steady and cannot be affected by an ordinary puff of wind. Again, as the oil is consumed the lamp rises gradually upwards, so that the flame comes nearer and nearer to the bottom of the case. Thus, when the lamp is first trimmed and full of oil and burning brightly, it is at the greatest distance ; when half the oil is consumed and the flame burns dully, it is very near.

This addition may make the whole look rather complicated, but it is exceedingly simple. The



lamp, as seen with the cover, is shown in the annexed figure. The contrivance for raising the lamp is quite distinct, and may be removed and the lamp used by itself.

With respect to the case, I believe I have succeeded in getting rid of the least smell which may arise either from the

smoke or the lamp, and this by a very simple plan, whereby I make it consume its own smoke. These additions add much to its completeness and but little to the expense. If I were having another case made, I could improve it greatly, and make the whole really ornamental. I see very

great scope for it to be rendered a most desirable and important addition to the amateur's greenhouse and conservatory. Indeed, I feel sure, that no one would be without out, if they were fully aware of its importance and the great pleasure which is connected with its management.

K. Z.

THE SALE OF CUTTINGS.

How is it that none of our enterprising young nurserymen have thought of starting a new line of business, viz., *the sale of cuttings*? The interest one feels in a plant which has been grown by oneself, and the difficulty and uncertainty which attend the raising of plants, particularly florists' flowers, from seed, would make such a scheme very profitable. What multitudes of ladies, what thousands of amateurs, in this "flowery land," would readily spend a shilling, or a half-crown, or even a half-sovereign, for a dozen or a score of nice cuttings, who would not think of expending the shilling, or the half-crown, or the half-sovereign, for a single plant?

I would suggest that the dealer should simply take off the cuttings, tie a tiny bit of lead-foil to each, with a number stamped on it; lay them between two layers of live (or, if dead, slightly damped) moss, and pack the whole in one of those little deal boxes that are made to go through the post, pasting a slip of paper round, for security, and for the reception of the address, inclosing also a paper on which the numbers and names are written. A fair price would, perhaps, be about one-twelfth of the value of a good plant, including package and postage for all orders not less

than a shilling, or a penny apiece for common cuttings. Let any one advertise in your pages that he is prepared to do this, and doubtless he would have as many orders as he could supply.

Without pretending to any special data for estimating the value of such a business, I conjecture when once the plan became thoroughly known, at least five thousand persons might average orders of ten shillings each per annum. This would turn £2500; and as a single man with a small propagating house, laying out £5 or £10 in well-selected advertising, and a few pounds more in plants, could make a start, he might secure more than a living profit, and find the business grow in his hands to something considerable. He ought to add a very free dissemination of a printed list of what he can supply, arranging his plants in classes, according to the price—"cuttings at a penny each, cuttings at twopence each," and so on.

I shall look for a response to this suggestion in the form of an advertisement in the leading horticultural papers soon.

AN AMATEUR.

[Mr. Morse adopted this plan. We know not if he succeeded.—Ed.]

WELWITSCHIA MIRABILIS.

At a recent meeting of the Linnæan Society, the following communication was read by Dr. Hooker:—

This plant is the very remarkable one already mentioned in our last year's volume, under the name of *Tumboa*, *T. strobilifera* being the name applied to it by its discoverer Welwitsch. It is a woody plant, forming a very thick corky-looking mass, rising but a few inches above the earth, and producing a couple of ligulate leaves of hard, leathery, or almost woody texture, and of a glaucous green colour, spreading horizontally on the ground, and in age becoming split up quite to the base into narrow strips. The inflorescence consists of a peduncle about a

foot high two or three times branched, bearing numerous oblong ovate cones, the scales of which are very regularly and closely imbricated, and evenly four-ranked. These cones, which are shortly stalked, are borne two or three together from the apex of the terminal ramifications, and one or more from the lower forks of the peduncle, and they were represented to be about 2½ inches long, and about half as much in diameter. The peduncle and pedicels were stated to be of a violet red, and the cones of a brownish red colour. This curious and anomalous tree! which Dr. Hooker has referred to the order *G. etaceæ*. was found on sandy and rocky hills between Mossamedes and Cabo Negro.

PROFITABLE GARDENING.

CHAPTER XXIII.—CULTURE OF THE PEAR.

THE culture of the pear has undergone many changes during the last few years in Britain. Numerous improved varieties have been introduced to cultivation, the principal view to the selection of these being their capability of producing rich, melting fruit, of high flavour, in a climate not altogether favourable to the pear at the important season when the trees are in bloom. The Swan's Egg, one of the most esteemed pears of the old catalogues, and still valuable for its hardiness and fruitfulness, represents the class of fruits which are being fast superseded by kinds equally hardy and prolific, but of higher quality for the dessert. In no particular subject on which the skill of the hybridizer has been exercised, is the result so marked and satisfactory as in the improvement of the pear. This fact must be kept in mind by cultivators, for in selecting varieties now, it would be most unwise to limit the selection to the kinds that were most esteemed half, or even a quarter of a century since; and in like manner in cultivation, it would be a folly to pursue antiquated methods, because with the introduction of new and superior varieties the routine of culture has been modified to suit them, the main object being to produce in this fickle climate pears as nearly as possible of the same excellence as those of Jersey and the continent. I shall here give a general sketch of the essential points in the cultivation of the pear, and in the next chapter that of the management of uncongenial soils, and varieties of delicate or peculiar constitution.

The pear is usually grafted on either pear or quince stocks. Grafted are, as a rule, preferable to budded trees; they bear earlier, and a complete junction is soon effected, for the pear is an admirable subject for grafting. But budding may be resorted to with advantage, where, for the purpose of testing new varieties, buds can be inserted in vigorous bear-

ing trees during summer, as by pinching in the shoots from these buds, they may be induced to form spurs very quickly, and the growth may be regulated with greater nicety than grafts. In choosing trees from a nursery, those for orchard standards should be on pear stocks, those for bushes and espaliers on quince stocks. In the cultivation of the pear as a recreation, and with a view to the formation of a collection, either large or small, of the choicest varieties, bushes should predominate, and preference should be given to those that are worked very near the ground, the shorter the stem the better: it is desirable in order to have the greatest possible production of short-bearing wood in the least possible space, that the stem should be furnished almost to the ground. And the reason for choosing those worked lowest down is to allow of deep planting. As we are perpetually waging a war against deep planting, we must justify the recommendation by an explanatory remark. The quince is a free-growing, healthy tree, with a close, dense bark, when it carries its own head; but when the pear is grafted on it, the bark of the quince is apt to split into fissures, and when this takes place, the pear is checked in its growth, and evidently has not its proper share of nourishment from the foster roots. To make an end of the difficulty, plant the bushes so deep that the junction of graft and stock is level with the surface of the soil. The bark of the quince being then wholly below ground, can swell as it pleases, the moisture of the soil suits it, and it will be found to throw out roots from the collar downwards, much to the benefit of the pear. Now if the bushes are grafted on stocks of great length, say a foot from the ground, the advantage of placing the whole of the stock under the soil, will be counterbalanced by the evil of the original roots being thrust to an unreasonable depth, away from the influences of air

and light; and allow me to say that light has its influence on surface roots, though the soil covers them. Therefore, choose trees with short stocks; if there are only four inches of stem between the main roots and the insertion of the graft all the better, but six inches is plenty, and if the public demand bushes of this shape, the growers will take care to produce them. Standard trees should be grafted at the full height required for the stem. It is very objectionable to graft these low, and run up a stem from the graft, as the choice varieties of pear are mostly given to the production of shoots even on old stems, whereas the pears used as stocks, when once cut to clean stems do not so readily make side-shoots below the head.

On all good loams the pear thrives on either kind of stock, or on its own roots. On damp soils the quince is more at home than the pear; standards and pyramids must have a well-drained soil, and on the quince effectual drainage is not the less required, though, if neglected, the results will be less disastrous than if planted with trees worked on the pear. Sandy, chalky, and heathy soils are not well suited for the pear, and where difficulties of this kind arise, a few varieties will be found to answer worked on thorn stocks, but the selection will be limited. To do justice to a good collection of pyramids and bushes, the soil should be a hearty yellow loam, if inclining to clay, equally suitable. It should be effectually drained, open to the south and west, and sheltered from the east and north, and if on a regular slope to the sun, it will be an additional advantage.

Standards require at least two feet depth of soil; but bushes and pyramids will thrive on a depth of eighteen inches or less if the soil be in good heart, and the aspect a warm one.

It is often wished to plant choice pears in gardens where there is no effectual outlet for drainage. In this case the trees should be planted on stations, and the sites for them raised above the level, on the plan

already described for the culture of the apple under similar circumstances.

The pear usually grows with great vigour the first three or four seasons after planting. When the trees begin to bear, they make much less wood, and require less attention to keep down watery spray. The first object of the cultivator in the management of young trees should be to get them regularly furnished with plump wood, the form of which must be regulated according to the kind of trees required. Pyramids may be allowed to grow more freely, and more in their own way, than bushes; these require to have all the young shoots pinched in at least twice during the summer, to promote the formation of spurs, and prevent any one shoot from acquiring preponderance of strength. This pinching in is the most important of all the operations connected with the culture of bush fruits.

In the beginning of May, the trees should be looked over, and all ill-placed buds and starting shoots should be cut clean away. From this time to Midsummer the growth of the new shoots that remain will be very rapid; some will run away into long green rods, others will show signs of a tendency to form short fruitful spurs: the first are to be checked in time, the last are to be encouraged. There is a rule observed by many cultivators of pinching back all the shoots to the third leaf from the base early in June, and early in July pinching back the shoots, which push from the buds left on those previously pinched also to the third leaf. But in practice it does not answer to follow any rule very strictly. Where there is a gap in the filling up of the furniture, an endeavour must be made to induce the growth of shoots to fill up that gap, and very often it will be found advisable to cut back a few branches to one bud, and by pinching in the shoot from that bud, to obtain a set of small shoots to fill up the vacancy.

But the rule of pinching to three leaves should be kept in mind in the process of pinching, for a general principle, and to be departed from

only as circumstances may require. At the June pinching the shoots which look browner than the rest, and which assume at once the character of spurs, should be left untouched. They will probably not grow at all; but maintain their leaves to the last, and the next season show for fruit; but usually the shoot must be three years old before it becomes fruitful. As the pear makes occasional vigorous shoots, which even pinching will not subdue, the knife must sometimes be used. Some old gardeners hold to an idea that by allowing a tree to carry all the wood it makes will exhaust it in time, and restore the sap to a balance. But there cannot be a greater mistake. Strong, sappy shoots allowed to have their own way only gain strength to overcome the general vigour of the tree, and the knife must be used if the growth is to be evenly distributed with a view to the production of an abundance of spurs. At the end of July another pinching should take place of all the shoots that are still growing, allowing on an average about four inches to each, and in every case where the knife is used, cutting close back over a bud, so that there shall be no dead snags hereafter. From this, or from the first week in August, at latest, no more pinching or pruning should take place, or the fruit buds may start prematurely into leaf growth. The young shoots on bearing trees may be tied down to the older branches, and if bent a little out of their natural position it will cause many of them to form the foundation of spurs for growth the next season.

Some pruning must be done in winter, though if pinching has been assiduously practised, but little winter pruning will be necessary. But the

winter culture is not less important. All pyramids and bushes which it is desired to keep completely under control should be lifted in November, the ground stirred and the trees replanted again directly. This process checks luxuriance, and increases fruitfulness; but it must be carefully performed. In the first instance, a trench should be opened round each tree, about fifteen inches from the stem. The roots should then be loosened by getting a four-tined fork under them, so as to lift them out in a complete ball. Any straggling roots may be cut away; all bruised portions must also be removed by a clean cut with a sharp knife. When the soil has been stirred, a few shovelfuls from the surface should be thrown in, and the tree planted again firmly, and with the ball as complete and compact as possible. If the soil is good enough to grow a cabbage, no manure will be required; but in poor soils a little manure should be chopped over with the surface soil used to fill in round the roots, and not a scrap of it should be placed in the hole. The object of this is to encourage surface fibres rather than deep roots.

Bushes and pyramids managed in this way soon become most beautiful objects. We have trees of Prince Albert, Beurre Diel, Passe Colmar, Winter Nelis, Glout Morceau, and others of equal excellence, that are perfect pictures of beautiful foliage all the summer, and when in bloom equal to any object of a similar character in the garden. Beurre Diel has a foliage equal to a camellia, and is one of the most beautiful for a sheltered lawn. An advantage of no small value in the cultivation of bush pears is the ease with which they can be sheltered with tents of tiffany, or hexagon netting.

LITTLE GARDENS AND FLOWERY WINDOWS.

I.—INTRODUCTORY.

Of all the various modes of beautifying and adorning the abodes of men, it is im-

possible too highly to extol that which relates to the culture of flowers. Floriculture is at once an high art, and a simple recreation. It contributes largely to the com-

merce of a great nation, and to the pleasurable occupation of the leisure hour. It affords gratification at once to the proud noble and the humble peasant, and is studied by the wealthy merchant, and the poor labourer. Concerning the art of plant growing, as it is often practised, merely as a medium for obtaining prizes at our horticultural shows, we have nothing to say. But as a means of adorning and beautifying our English homes, we sincerely hope and believe floriculture is rapidly increasing; and viewed in that light, we venture to assert that it deserves the aid and encouragement of every thoughtful mind. Were it asked, What is to draw the working man from the debasing pleasures of the public-house? we should not hesitate to answer—Give him a little garden, and inspire him with an interest in it, or give him a clean comfortable home, and instil into him a desire to adorn it. It cannot be denied that the working classes are acquiring a taste, not only for gardening and floriculture, but also other useful and intellectual means of employing the leisure hour. Many working men excel in the art of growing some floral treasures, for which they have a particular fancy; many working men endeavour to make the few square yards of ground attached to their humble dwellings either highly ornamental or productive. Yet it must be a matter of serious concern to many thoughtful minds, that while workmen living in towns hire a garden plot at a considerable distance from their homes, and make it their Sunday business to attend to it, there is around the metropolis, at the present time, acres and acres of valuable soil lying in waste, which support nothing but crowded and miserable-looking shrubs and trees, which so far from being ornaments of their kind, disgrace the very name. Valuable space which is occupied by nothing but the broad stunted hedge or stagnant pool, we have no desire to find fault with, nor have we need; of such there is abundance everywhere. But when it is considered how many poor labouring people might derive real and healthful enjoyment from this waste land in the form of little gardens—when it is considered how much these wasted acres might contribute to the social and intellectual welfare, not only of individuals, but of the community, it is greatly to be desired that those who have the power should give the subject their serious consideration. Such acts of patriotic generosity as the above implies, would require a larger amount of self-denial, and probably would make less noise than the passionate and exciting addresses some men

are in the habit of delivering from the platform, yet it is not difficult to guess how far they would stand before the latter, at that time when a man's good works are his surest passport to happiness.

The art of gardening has been ably and successfully expounded by writers of considerable merit; and at the present time the press teems with literary productions, for the purpose of extending useful information upon the subject to the uninitiated. Yet it occurs to us that there is an open void which requires filling up. A vast number of dwellings of the humbler sort, in and around London, and probably other large towns, are fronted by a little square of ground, which to all intents and purposes are meant to become little gardens. We have not to walk far in any direction without seeing a number of these frontages, which present a negligent and unsightly appearance. This state of things may arise from various causes, and we may premise that one of those causes is the want of proper instruction; and if this little work can supply the information required, our object will be gained. We believe there are many who have both the will and the time to indulge in this delightful recreation, to whom such information as can be applied to their particular requirements would be acceptable. We shall endeavour to treat upon each divisional subject in rotation; but it should be thoroughly understood, that no amount of instruction can compensate for any want of personal attention; nor is it possible that first attempts should be always successful; a proficiency in the art of gardening and floriculture is acquired only by practical experience; but if there is a decided interest in the work at its commencement, that interest will increase as skill and dexterity are attained.

II.—ON LAYING OUT LITTLE GARDENS.

First, with regard to little gardens, which it is desired to alter or improve; it sometimes happens that the space is occupied by one or more trees. Now trees are decidedly out of place in little gardens; and unless they are useful as screens, or are regarded with particular favour, we would strongly recommend their removal, as few plants will grow under them, and they are very littery in the autumn; but if it is desired for one or both the above reasons to retain them, care should be taken to select such plants and shrubs as will thrive in their shade, or exposed to their drip: a list of such plants we shall give in due time. Or it may happen that the old garden is filled with some deciduous shrubs, as lilacs or snowberries, which during the

winter months are about as ornamental as a bundle of sticks; in the spring they produce a few flowers possibly, but in the summer the dust and smoke render them anything but ornamental; and in the autumn they make the whole place untidy, besides they are gross feeders, and extract all the nutritive qualities from the soil, and sap the moisture a considerable distance around, and make it impossible for smaller plants to thrive near them; therefore we would recommend that such, with all other old or worn-out shrubs, whether deciduous or evergreen, be discarded without mercy. Sometimes we have seen the little frontage overrun by a species of starwort, or what is worse, by couch or twitch grass; the roots of these should be carefully collected, and burned if possible, or they will become a continued nuisance. If there be any box edging, this should be taken care of, and if there are any plants or shrubs that are ornamental, or might become so, they should be laid aside; in other respects, improving an old garden is much the same as laying out a new one. With regard to soil and drainage, very little need be said; it would be unwise to describe expensive processes to those who cannot make use of them. The soil must generally be taken at what it is, to make the best of it; but for the benefit of those who desire to know, and can get the material, we would observe, that if ground is light and quickly loses moisture, a dressing of fat loam, or even clay will greatly improve it; or if it be stiff, heavy, or retentive, a dressing of road-scrappings, or any grit would improve it. Drainage will scarcely be required, unless the ground lays very low, and the soil is of a retentive nature; where this is the case, first find some outlet, then lay one or more drains towards it—these are made by laying pipes or tiles in a trench, which slants towards the outlet; in lieu of tiles, the trench may be filled with brick rubbish, broken crockery, or anything that will preserve an open space for the water to run through; the drains may be covered, just allowing that the water can filter to them. When the ground has been deeply dug or trenched, the next thing to consider is the plan or shape. The designing of a garden will admit of as much variety as the printing of calico, or the staining of paper, yet there is too great a tendency to imitate, and too little originality. An original design, however tame, is, at least, something fresh, and far better than copying from neighbours. We leave it to those who may have such an affair in hand, to exercise their ingenuity, and bring out something new, merely observing that the

circular and oval form is preferable to the square, and that the curve line is better than the point or angle, and that one bold large bed or border will have a better effect, and be easier to keep tidy, than a number of intricate ones which are productive of much trouble, and often look puny and simple. We cannot recommend the introduction of turf into little gardens, unless it can be well and thoroughly attended. A broad sweep of lawn in a large garden is a noble feature, and even in a small garden, well-kept grass is highly ornamental; but the few square feet of neglected grass in the little frontage, has a miserable appearance, and for the reason that it might not be kept in trim, we advise that it be kept out of the little garden.

Having fixed on a plan, and marked out the paths, the next affair is the edging. If box is obtainable, nothing can be better for the purpose. Any one who has seen box edging may guess how it is planted. The ground should be made firm to prevent its sinking; it should be exactly level, and of the proper height; the edge should be cut smoothly with a spade, the box laid evenly, and the soil pressed to it immediately, and if in dry weather, it should be well settled in with water. The surplus soil from the path should be thrown on the border to raise it a little as it recedes from the edging. But if box edging is not easily obtained, the next best thing to it is white arabis; the next to that is thrift, or *Statice maritima*, *Gentiana acaulis*, London Pride, daisies or primroses, each of these will make a very neat edging, and flowering in their season will look very pretty. They may be planted in the same manner as box, but the usual mode is to plant them with a dibber; having made the ground firm by treading, of a proper height, and exactly level, make a mark where the edging is to be, then take divisions or offsets of any of the above, and plant them about six inches apart, either in one row, or one each side of the mark in zigzag fashion. It is a common practice to make edgings of deal boards; this is decidedly objectionable, because they are not durable, and they present a stiff and formal appearance, which is anything but pleasing; slates or tiles are more durable, but not more ornamental; a row of flints, or large pebbles are better than either. Where burs are obtainable they make good edging on which alpine plants may be allowed to trail; cuttings of ivy or *Cotoneaster microphylla*, planted after the same manner as box, will strike root and make a fine bold edging, but require judicious pruning to keep them within bounds. As we before observed, a

few inches of soil from the path should be thrown on the border; the hollow thus left should be filled with brick rubbish, or any coarse material; to within a trifle of the height the path is to be, make this firm, and if gravel can be obtained to finish off with, nothing better can be desired. It is only necessary to level the gravel, tread it well, and smooth it off with the back of a rake, when a roller will finish it; but as every one does not possess a roller, it may be trodden and smoothed again and then finished with the back of a spade. If, as it sometimes happens, gravel is not to be got, the next best thing is to pave the path with pebbles, having prepared it as for gravel, lay the pebbles close together, and run sand or fine earth between them; next to pebbles we believe burnt clay makes the best path, although we never tried it ourselves; road sand will be better than nothing, and common garden soil worst of all. If the weather should be dry, see that the edging is well watered, for much of the success in planting depends on everything being settled in at first; care should be taken that the paths are so that no water can rest on them; they should be slightly higher than the border, where the water is more necessary. Having accomplished this much we proceed to

III.—PLANTING LITTLE GARDENS.

To describe all the various modes by which a garden may be kept fresh and lively during the twelve months of the year would fill a large book indeed; nor is it necessary here to give more than one or two of the least expensive. The plan whereby a little garden may be kept neat and tidy, at the least possible outlay and with the least amount of labour, is to plant it with dwarf compact, young evergreens, which may be procured in abundance and at a cheap rate at any of the nurseries around London. Evergreen shrubs may be made to yield a most lively and interesting appearance, if they are kept dwarf and within bounds, and are allowed sufficient room. The following are the names of such shrubs as are most easily procured, and will thrive in almost any soil or situation:—*Aucuba*, *Japonica*, *Alaternus*, *Box*, plain and variegated; *Berberis*; *Sweet Bay*; *Common Laurel*; *Eunonymus*, or spindle-tree, plain and variegated; *Gum Cistus*; *Hemlock Spruce*; *Holly*; *Laurestinus*; *Portugal Laurel*; *Phillyrea*; *Common Irish Yew*; *Arbor-vitæ*; *Juniper Savin*; *Rosemary*; *Lavender*; and *Rue*. Of the above the holly, the yew, the bay, and *arbor-vitæ* grow largest; the four last are most dwarf, and should, therefore, be

nearest the edge; but all may be kept close and compact by timely and judicious pruning. In planting them, care should be taken that the hole be made large enough, and that they be not buried deeper than they have been used to, and that they be well settled in with water, and no matter what time of the year it is done. But there are some who would prefer deciduous shrubs to evergreens, on account of the blossoms they produce, which is certainly reasonable; but for reasons which any one may discover who will give attention to the subject, deciduous and evergreen shrubs should not be mixed; let them be by themselves, and a collection of the following will look gay in their season:—*Althea frutex*, red and white; *Corchorus Japonica*, yellow; *Deutzia gracilis* and *scabra*, white; *Pyrus Japonica*, scarlet and white; *Ribes*, red; *Spirea*, pink and white; *St. John's Wort*, yellow; *Syringa*, white; *Lilac*, white, blue, etc.; *Guelder rose*, white; *Weigelia rosea*, rose; *Daphne Mezereum*, red. Of these the two latter are the dwarfest; to which may be added hardy azaleas for the front row; but the latter require peat to grow in; they will not thrive in common soil. None but young healthy plants of the above should be admitted, and they should be kept within bounds by timely and judicious pruning. The same rule should be applied to these as to everything else, that is, to settle them in with water at planting, and afterwards till they become established, or so long as the weather holds dry. Some persons have a particular fancy for American plants; these are more expensive than common shrubs, on account of the peat which is necessary for them to grow in, but they are splendid objects when in flower. Young plants of hardy hybrid rhododendrons may be had tolerably cheap at most of the London nurseries. If these are planted in a centre bed, they will have a fine effect in the flowering season. To plant them, either the whole bed should be dug out to the depth of two feet or so, and this filled in with chopped peat, and the Americans planted therein; or each hole should be made considerably larger than would be otherwise required, and this filled in with peat. If the subsoil is gravel, it would be better to lay a little clay at the bottom of the bed or of each hole, for American plants require a great deal of water while they are growing, and if the soil loses moisture very quickly, they will not do well. Other Americans, which require a little peat, although they will grow in other soils, are—*Andromedas*, *Arbutus*, *Daphnes*, *Kalmias*, *Magnolias*, *Heaths*, *Empetrum*, or crowberry—the two latter

being most dwarf, are most suitable to be nearest the edge. A little garden may be planted with shrubs alone, and yet be made to maintain a creditable appearance the whole year; but many prefer the space of a yard or so next the edging to grow flowering plants. This space may be planted with hardy herbaceous plants, which are always green, and thus in keeping with the other parts, or it may be planted with bedding plants or annuals, to enliven it during the summer. Some might wish to have the whole space planted with hardy herbaceous plants, which all produce flowers of more or less merit, and some of them are evergreen, such as the following, which are all of dwarf habit:—*Antirrhinum*, various colours; *Alyssum*, yellow; *Arabis*, white and blue; *Bellis*, or daisy, various; *Cerastium tomentosum*, white; *Cheiranthus Marshallii*, yellow; *Caltha palustris*, yellow; *Christmas rose*, white; *Dianthus*, or pinks, cloves, carnations, etc., various; *Double white Feverfew*; *Gentiana acaulis*, blue; *Geranium*, red; *Helianthemum*, or sun rose, scarlet, yellow, etc.; *Iberis*, or candytuft, white; *Iris*, various; *Lysimachia nummularia*, or moneywort, yellow; *Phlox nivalis procumbens*, etc., red, white, etc.; *Potentilla*, various; *Pentstemon*, red; *Primrose*, yellow, lilac, red, etc.; *Saxifrage*, various; *Pansy*, various; *Ledum*, various; *Veronica*, blue and white; *Vinca*, or periwinkle, blue and white; *Violets*, blue and white. To which may be added *Farfugium grande*, valued for its fine variegated foliage; also, *Thymus Corsica*, for its beautiful scent. All the above are evergreen, and will make a garden look fresh in the winter. But there are other sorts equally valuable for their flowers, but which die down in the autumn, such as *Alstræmeria*, various colours; *Anemone Apennina*, blue; *A. nemorosa*, white, etc.; *Arum maculatum*, green; *Campanula*, blue and white; *Catananche*, blue and white; *Centaurea*, various; *Chelone*, red and white; *Diclytra*, red; *Dodecatheon*, pink and white; *Geum coccineum*, scarlet; *Hepatica*, red, white, and blue; *Mimulus*, various; *Monarda*, red and purple; *Poppy*, scarlet; *Plumbago larpente*, blue; *Ranunculus*, yellow; *Rocket*, white and purple; *Trollius*, white and yellow; *Statice*, blue. These seldom exceed eighteen inches in height. The following of taller habit:—*Aconitum*, or monkshood, blue, white, and yellow; *Anchusa Italica*, or bugloss, blue; *Anemone Japonica*, red; *Aquilegia*, or columbine, various; *Aster*, or starwort, various; *Chrysanthemum*, various; *Campanula*, blue and white; *Delphinium*, or larkspur, blue; *Fraxinella*,

red and white; *Geranium*, various; *Hemerocallis*, or day lily, yellow; *Lobelia*, or cardinal flower, scarlet; *Lychnis*, scarlet and white; *Phlox*, various; *Solomon's seal*, white; *Saponaria*, or soapwort, light pink; *Solidago*, or golden rod, yellow; *Tritom uvaria*, scarlet and yellow; also, *Fuchsias coccinea* and *gracilis*, which are perfectly hardy, although they die down in the winter. A selection of bulbs might with advantage be interspersed amongst the foregoing; they are mostly free blooming and of bright colours, and add considerably to the beauty and cheerfulness of a garden. The more hardy kind of bulbs are not expensive, and they rapidly increase when once in the ground. Those best adapted to little gardens, and which will thrive almost anywhere, are winter *Aconites*, yellow; *Snowdrops*, white; *Crocuses*, various; *Star of Bethlehem*, white; *Scilla bifolia*, white, etc.; *Narcissus*, or daffodil, yellow; *Grape-feathered* and starch hyacinths, blue and white; *Snowflakes*, white; *Dog's tooth violets*, white and purple; *Anemones*, various; *Allium moly*, yellow; *Tigridia*, various. These are mostly very dwarf; others of taller habit are *Late Tulips*, various; *Crown Imperials*, red and yellow; *Lilies* of various kinds, as *L. candida*, white; *L. martagon*, scarlet, yellow, etc.; *L. tigrinum*, deep orange, spotted, and several others. Bulbs that are generally imported, and may be had in abundance in the autumn, at which time they should be planted, are early tulips, hyacinths, narcissus, jonquils, etc.

From the foregoing lists a selection may be made which will keep the little garden in blooming condition nearly the whole year, and when once planted they will continue for years; but as some of them grow much faster than others, it will be necessary sometimes to take them up, and divide the roots of the freer growing sorts. If all are kept clean and tidy, and the ground disturbed between them often, these will give as creditable appearance to the little garden as anything. But yet some may prefer other modes of planting the little garden. Such plants as the above might be placed widely apart, and bedding plants or annuals placed between; others may be fond of annuals, and desire to have them alone. Of annuals some may be sown in September, to stand the winter, and flower early in the spring; other sorts, if sown early in the spring, flower early, and are soon over; some flower more in the summer; others flower till the winter's frost cuts them off. The seeds of most kinds of annuals can be procured very cheaply, but very cheap seeds

should be looked on with suspicion, for there is much deception practised by cheap venders. It is worth knowing that annuals may be kept in bloom a long time merely by picking off the old flowers as fast as they begin to fade. Where this is not done, they perfect their seeds in abundance, and some sorts are soon over, and have ripened a quantity of seed before they have done flowering. It may be also worth knowing by what means success is most likely to attend the sowing of small seeds. There are various causes of failure—the ground may be too cold and wet; in this case the sowing should be put off till warmer weather; or the ground may be too light and dry, when it will be as well to sow immediately after rain; or the ground may be too rough, and the seed gets buried too deep. To prevent this, it is a good plan to press the spot with the bottom of a garden pan or saucer, and on the flat level place thus made scatter the seed and cover very lightly with very fine earth. The seeds should be buried slightly or otherwise, according to the size; for instance, the seeds of *salpiglossis* and others, being very small, require but the slightest covering; those of *larkspur*, being larger, may be buried nearly half an inch; while lupins of the larger sort may be buried more than an inch. Care should be taken to give them sufficient room either by sowing thinly or by thinning them after they are up; six in a patch is quite enough of anything, and the thinnings will bear planting again. If the ground remains moist till the seeds are up, so much the better, but if watering is necessary, they should be kept moist, for if the ground becomes caked over the seeds, they will not grow. The following are some of the kinds that will grow almost anywhere:—*Sweet Alyssum*, white; *Aster tenellus*, blue and yellow; *Campanula*, or *Venus' looking-glass*, blue; *Catananche lutea*, yellow; *Claytonia perfoliata*, white; *Cynoglossum linifolium*, or *Venus' navelwort*, white; *Godetia tenellus*, purple; *Gypsophila muralis*, pink; *Kaulfussia ammeloides*, blue, rosea rose; *Leptosiphon*, various; *Limnanthus*, various; *Linaria Peregii*, lilac; *Lupinus alpinus*, blue and white; *nanus*, lilac and blue; *Malcomia maritima*, or *Virginian stock*, rose; *Nemophila*, various; *Mignonette*, *Nolana*, various; *Saponaria Calabrica*, red; *Scorpiarus vermaculatus*, yellow; *Silene procumbens*, pink; *Trifolium aurantiacum*, yellow; *Veronica syriaca*, blue and white. These are of very dwarf habit, seldom growing more than nine inches in height; therefore, should be placed nearest the edge.

The following average from one to two feet in height:—*Candytuft*, white, pink, etc.; *Coreopsis*, various; *Cacalia*, various; *Convolvulus minor*, blue; *Collinsia*, various; *Clarkia*, various; *Cape marigold*, white and purple; *Eutoca viscida*, blue; *Cerithe*, or *honeywort*, yellow and purple; *Hawkweed*, red and yellow; *Jacoea*, crimson; *Ononis pubescens*, or *rest harrow*, yellow; *Nasturtium*, dwarf, various; *Nigella hispanica*, or *love in a mist*, blue; *Godetia*, various; *Gilia*, various; *Roman nettle*, green; *Rose Campion*, red; *Schizanthus*, various. There are some still taller annuals, which range from two to three or four feet in height: *Datura*, purple and white; *Helichrysum macrantha*, white and pink; *Lavatera*, red and white; *Lupinus Dunettii*, yellow, purple, etc.; *Malope*, crimson and white; *Persecaria*, tall, red; *Princes Feather*, crimson; *Palma Christi*, *Xeranthemum*, various. All the above are called hardy annuals, and may be sown in the open ground any time in March, April, or May. Many of these, if sown in September, on a warm border, will stand an ordinary winter, and will flower early and strong, and produce seeds which, if sown as soon as ripened, will grow and flower the same autumn; besides, if annuals are sown late, they will bloom late, and some of them, even if sown early, will continue flowering till the early frosts of winter cut them off. Thus, even with annuals, it is quite possible to keep the ground covered during the whole year, if not with blossoms at least with leaves, which are the next best things. These are but a portion of what might be named, but a small packet of seeds of all the above would fill a large garden. Half a dozen sorts are sufficient for a small one, and it is worth while to remember that nothing is worse than over-crowding; each plant will require a space proportioned to its height and breadth, or they will never do well. Half-hardy annuals, such as *Asters*, *Marigolds*, *Phlox Drummondii*, *Stocks*, *Salpiglossis*, and *Zinnias*, and also *Balsams*, although the latter are usually classed as tender annuals, may be treated in the same manner, excepting that they should not be sown till April, and then not till the end of the month, unless they are sown in a frame, or under a hand-glass, or in pots placed in the window, from whence they can be planted out in May; half hardy annuals generally comprise within each genera a large variety of colours, and have a fine effect if planted in masses. A little garden, if planted with *Asters*, *Zinnias*, or *Phlox Drummondii* will present a perfect blaze of flowers during the flowering sea-

1, and a small packet of either will be and sufficient for one season, when it is worth while to try something else for the next. About the time annuals have ceased blooming, it is a very good time to sow biennials. These should be sown in July, in a bed apart from anything else, and about the month of October they will be in condition to plant out in the place of annuals, which will then have passed their prime, and soon will be over. Hardy biennials, if not drawn up by being allowed to grow too thick, will give the garden a fresh and evergreen appearance during the winter, and will put forth their handsome flowers the following summer. Many of them are highly ornamental. The following are most usually grown:—Canterbury bells, blue and white; French Honeysuckle, various; Indian Pinks, various colours; Perennial Stocks, various; Sweet William, various; Scabious, various; Wallflowers, various. It is far from advisable to have more than two or three sorts in one season. Each plant has plenty of room, they will grow well and do well, but the sight of a crowd of miserable, half-starved plants, crowded together in a little garden, although common, has a discreditable and ungardenly appearance. We would observe here that names as we have inserted apply to things as are easily and cheaply produced, which are usually grown, and which are admitted to be highly ornamental; yet we have named few indeed, compared to what might be named; nor would we advise any one to confine themselves to such, nor, indeed, to any lists; such flowers one might reject, another might regard as a particular favour; and while one desires only such flowers as are usually cultivated, another may be highly interested in the common wild flowers of the meadow or the hedgerow, and each may be high in display in both taste and merit.

The true merit is seen in the effect, and it is produced by skill and industry, before let the lords-and-ladies from the roads, and the cowslip from the meadow transferred to the little garden, and let skill and judgment be employed in the sowing and management, and we guarantee that it shall be in keeping with the true principles of horticulture. As we before observed, the various modes of planting, arranging the shrubs or plants in a garden, and the various species of plants which it may be furnished, are wonderfully numerous; so that laying down cut-and-dry set of rules to be observed in arranging or furnishing a garden would be absurd; yet it is well to know what

particular plants are suitable to particular situations. All bright and free-blooming plants do best in sunny situations, and all plants valued for the beauty of their foliage should be placed in shady situations: of the latter, ferns are conspicuous, but more of them anon. There are some few hardy plants which are remarkable for fine foliage or habit, such as *Farfugium grande*, *Arum maculatum*, *Pulmonarias*, etc.; these, with ferns, should invariably be placed in shady situations, since the direct rays of a burning sun are likely to disfigure them, which in this instance, is a permanent injury, or at least one that will last till the following season; this does not apply so strictly to flowering plants, many kinds of which will bloom as well in the shade as in the sunshine; and *vice versa*. Many little gardens may be so situated that the direct rays of the midday sun shine full upon them; in this case if the soil is of a cool retentive nature, there need be no fear of planting anything, nearly all plants will bear the heat of the sun if the roots are cool and moist; but if it be, as in most cases with which we are acquainted, that the soil is of a light gravelly texture, there are some things which will not grow during the summer, at least not without a continued use of the watering pot; but as this entails considerable labour, it is worth while to know what can be grown wholly or partly without it; such situations are decidedly favourable for spring flowering bulbs, which flower at a time when the ground is sufficiently moist to support them, and the porous soil and hot sun will ripen the bulbs, and the moisture soon draining through the ground, will prevent them rotting; but during the summer months, scarlet geraniums with a small amount of moisture will preserve as creditable an appearance as anything, and will yield abundance of gay blossoms, where *calceolarias* would be burnt up. Pinks, cloves, etc., it would be almost useless to attempt to grow, but many of the evergreen herbaceous plants will thrive there as the *Sedums* for instance; but of course much depends upon the season, whether it be a wet or dry one.

Bedding plants give a splendid effect to a little garden, and they are subjects on which a greater share of skill and taste are employed in blending and harmonizing the colours than on any other class of plants. The following comprise what are usually grown for the purpose: *Calceolarias*, yellow, brown, etc.; *Cuphea platycentra*, scarlet; *Ageratum*, blue; *Anagallis*, blue and red; *Gaillardia*, various; *Gazania*, yellow; *Scarlet geraniums*; *Helio-*

trope, lilac ; *Lantanas*, various ; *Lobelias*, blue and white ; *Salvias*, blue and scarlet ; *Senecio*, crimson ; *Petunias*, various ; *Verbenas*, various. Of these the *Anagallis* and *Lobelias* are very dwarf ; *Ageratums*, *Lantanas*, and *Salvias* grow from two to three feet in height ; and *Hollyhocks*, *Dahlias*, and *Marvel of Peru* grow still taller, and are only suitable where there is plenty of room. The time of planting out all excepting *Hollyhocks*, is about the latter end of May ; nor is it at all safe to trust them out before, as late seasons have proved. *Hollyhocks* are hardy, and may be treated as hardy biennials, or the offsets may be taken from old plants in the spring and planted where they are to flower. *Dahlias* are perennials, and make tuberous roots, which are taken up from the ground when the plants have done flowering and are cut down, the roots are then stowed away in a dry cellar or other convenient place, are buried in a dry situation beyond the reach of frost, till the following April, when they are planted in a warm situation to break, when they are taken up and divided with an old knife or some such instrument, leaving one shoot to each piece of root, which plant where they are to flower. It is not safe to trust them for any length of time after planting without sticks to support them, as they are very brittle; the above mode of propagating the dahlia is most readily performed, and answers as well as any other, but where there is a hotbed a larger quantity of plants may be obtained from one root by potting it and plunging it in heat and cutting off and striking each shoot as soon as large enough. *Mirabilis* or *Marvel of Peru* may be treated precisely in the same manner as *Dahlias*. The ordinary bedding plants are half hardy perennials: they are best propagated, supposing there being no other convenience, on a shady border under a hand-glass or small frame, which is not difficult to construct; or cuttings may be struck in moderate sized pots, which are half filled with soil, the cuttings put in, and a piece of glass laid over the top of the pot, thus covering them in as completely as by a hand-glass. Cuttings of almost anything may be struck in this manner, and a good substitute for a hand-glass is a large flower-pot with the bottom broken out, and a piece of glass laid in its place; the sides of this will act as shades. Any soil will do for the purpose, but if it be not very porous it should be made so with sand, care should be taken that it be made thoroughly moist before putting in the cuttings; the best time to strike all bedding plants is July and August, the ground

being then a natural hotbed; *calceolarias* may be as well left to September or October; to strike scarlet geraniums, all that is necessary is to plant the cuttings as we do cabbage-plants; there will be no fear of their striking root; but for verbenas, etc., a little more care is necessary, but not so much as is generally supposed. Take the cuttings rather small, insert them in moist earth by merely thrusting them down, cover them up, and leave them for the next fortnight or three weeks, and nineteen out of every twenty will be struck. They should then be potted up and kept out of doors as long as possible, when they may be kept in windows during the winter, taking care that they are not treated too tenderly so as to be drawn up. We have often kept such things in a common frame, by merely banking earth round it thick enough to resist sharp frosts, and by well attending to the covering and uncovering with litter.

Having kept these till May, they are then planted with due regard to height and colour; the bright yellow of the *calceolaria* as a centre, the vivid scarlet of *Tom Thumb* geranium round them, these surrounded by white verbenas, and these again by blue lobelias, will harmonize together, and have a fine effect. But it is as well not to be guided by rule or precedent; our object should be to work in harmony with Nature, and yield rather to her freedom or irregularity than to our own stiff and formal designs. If the ground where bedding plants are grown is planted with bulbs, when they come off, the bulbs will flower in the spring, so that the ground will not be long bare, but bulbs, unless taken up every one or two years, are sadly in the way of digging or trenching the ground, and if the borders are kept neat and clean, and frequently stirred, they will by no means have an unsightly appearance, or they may be stuck with small boughs of evergreen to take off the bareness. Many persons have a particular passion for roses, and this beautiful and fragrant class of plants deserves all the attention it receives. There are few gardens wherein is not found a rose of some kind, from the fragrant tea-scented, to the old York and Lancaster. A little garden may be planted entirely with roses, and if rightly managed, will have a beautiful and interesting appearance during the summer months; let a few standards be planted about where the borders are widest, and let the ground be filled up with dwarf plants of China or perpetual roses, which may be procured on their own roots, either in pots or otherwise. Another plan is to plant four-foot standards for the

in row, two feet standards in front of them, then again one foot standard and arf roses on their own roots fronting whole; and if there be any wall or ce, climbing roses may be trained over

In planting roses, they should never buried deeper than they have been used and where they have a tendency to ow up suckers, these should be removed ast as they appear. Roses should also kept in form by rubbing off or stopping h shoots as are not wanted; if this is e in time, it will save the use of the fe, and is far better than allowing them grow anyhow, and then having to cut a great deal in the autumn or winter. es are very subject to the green-fly, ich should be brushed off as soon as it ears. They are also injured by a sort of mpillar which eats the young buds; se should be hunted for and destroyed, if sible, before they have done any mischief. es are propagated by budding, which been so often mentioned, and the pro- described, as to render it needless here; y are also raised from cuttings, which t freely if taken off while young, and ated as directed for bedding plants.

A very neat method of keeping a little den in order, is by cultivating the

plants in pots. Let a certain number of dwarf hardy evergreen shrubs, and a few plants of *Chieranthus Marshallii*, evergreen candytuft, yellow allyssum, and such like evergreen herbaceous plants; these are to be plunged about the borders for the winter, the herbaceous plants being placed next the edge; then if some snowdrops, crocuses, winter aconites, hyacinths, and other bulbs are potted, these can be plunged between them, and will flower in March and April. As soon as they are over, take them up, and plunge some spring flowering herbaceous plants such as the above-mentioned, which will flower in May; when these are over, they may give place to cinerarias, and these again to scarlet geraniums, heliotropes, pots of China asters, etc. If a succession of flowering plants can be kept up in this way, the garden will be always fresh and lively; one pot can be taken up and another dropped in its place; and thus nearly all the work may be performed in a place apart from the garden, which it is desired to keep in order. And, all things considered, this mode will take no more time or labour than any other.

F. M. CHITTY.

(To be continued.)

ON ROSES.

ERE are many readers of the FLORAL ALD, no doubt, who, from various causes, e not yet planted their roses; to such haps a few words of practical advice, n one who has bought his experience, y be useful and interesting. They will, I dare say, contain anything very r, but good advice cannot be too often eated, and a word in season which uld not be sought after, will frequently ide the doubtful, and confirm the waver-, in floriculture as well as in more ious pursuits. I would point to the nitiated that there is nothing very abase in rose culture if set about the right y. I well recollect the difficulties I ountered in my first attempts, for want a little proper advice, when a straight n of a Boursault was sold to me from an rior nursery as a "pillar rose" (on ount of its growth), and "John de ty," and "Lady Ellis Peel," were the icest varieties that were grown. How-, I would first impress on all intend- rose growers, that they must have, or , the proper soil. If that of the garden is

not already of a stiff adhesive character, a load or two of strong yellow loam or brick earth, and some rotten manure, must be obtained, and well mixed with the ground where the roses are to be planted. The quantity required must be according to the extent of the planting. A load of loam, and a few barrows of manure, would suffice for three or fourscore plants at the first set off. Dig a hole a foot or so wide and deep, pour into the hole half a gallon of warm water, working the earth about till it is the consistency of mortar. Into this plunge the roots, which will spread out into their natural form without cramping or injury in the soft semi-liquid, and fill up firmly with the dry soil. Remember, briars and own bottoms are not to be deeper than the collar, but Manettis two inches deeper than where the bud or graft is united to the stocks. Spread in a circle, two feet or so in diameter round the trees, two or three inches deep of manure; this is called mulching, to keep the roots warm and moist. Give plenty of water, and once a week, during the growing season, a good

dose of liquid manure. When plants are turned out of pots, I find it a good plan to place a large flower-pot over them for a few days, leaving it off by degrees, first at night, and then by day.

In the second place, you must get the *right sorts*, according to your locality. Mr. Hibberd has given, in various works, a trustworthy list for unfavourable districts, which I would not have the presumption to supplement were not some of the kinds of later date than his very valuable selection. In good soils and climates almost all kinds will do well with proper attention, but it requires more careful choice and treatment, to succeed within the four mile radius, where my little experience has been gained. Here you must place the plants in the most open and least smoky place you can, and keep them constantly clean. It is by no means a bad plan to scour the stocks sometimes with a scrubbing-brush, and soap and water—this prevents briars from becoming “bark bound”—a fertile cause of death to standards without any apparent reason.

I am sorry to see the Bourbons so little grown or shown. They are the best variety of all for the garden, being far more perpetual than the hybrid perpetuals; some of which, indeed, do not deserve the name. The best six roses grown, taken for all purposes and combination of qualities are, H. P. General Jacqueminot, crimson scarlet; Jules Margottin, light carmine crimson; Madame de Cambaceres, bright rose; B.'s Souvenir de la Malmaison, white, centre flesh blush; Queen, pinky fawn, and T. Gloire de Dijon, buff orange centre; N. Amie Vibert, pure white, may be added. With these, in any number of repeats, an amateur may insure abundance of bloom from early summer till frost cuts off the flowers. I have, however, appended a list of some fifty sorts or so, excellent, and exhausting all the distinct varieties and colours that are desirable in districts only moderately adapted for the culture of the rose.

And this brings me to reiterate my former advice—Buy of the growers! You will thereby not only get finer plants, unchecked by unnecessary removals, and true to name, but at a *cheaper* rate than when purchasing of second-rate dealers, who, themselves buy them by the hundred, and charge for all sorts alike. Most respectable growers pay the carriage to London, even of small orders, and some, as Messrs. Wood and Sons, of Woodland's Nursery, near Uckfield, Sussex, present a liberal number of additional plants to compensate for the expense of conveyance,

and make good damages occurring during transit if announced at once. If there is not a first-rate grower in your neighbourhood, obtain the catalogues of some of the noted dealers, and order from them according to your choice of the sorts and prices affixed thereto. I have nowhere seen finer plants than at Messrs. Fraser's, Lea Bridge Road, and in the north of London, the plants at Mr. Williams' Paradise Nursery, Hornsey Road, are excellent, and being acclimatized to the neighbourhood, would be well suited for amateurs in that district. Of the more distant growers, I can recommend Messrs. Wood, having been well served by them; and in the far off counties, Mr. Cranston, of Hereford, stands, I should say, A. 1.

LIST FOR AMATEURS, IN GRADATIONS OF COLOUR.

Very dark: H. P's. Francois Arago, Louis XIV., Triomphe de Paris, Gloire de Santhenay, B. Reveil, H. P. Maria Portemer; Rev. Mr. Radclyffe says this is the best crimson purple grown; very free in autumn; Triomphe des Beaux Arts (somewhat lighter), H. P. Lord Raglan, Eugene Appert.

Crimson Scarlet: H. P. General Jacqueminot, Geant des Batailles, Senateur Vaisse, and Prince Leon. The last not so scarletly, but though of dwarfish habit, the best shaped and finest highly coloured rose known; does near town, and flowers freely in autumn—with me at least. I do not think this is grown half so much as it ought to be.

Light Scarlet: Oriflamme de St. Louis, Ravel, M. C. Crapelet.

Lighter: General Washington, quite new, and good in autumn; Alexandrine Bachmeteff, or S. de Leveson Gower; Jules Margottin, altogether one of the very best.

Bright Rose, and that line of colour: H. P. Victor Verdier, excellent in autumn; William Jesse, M. Montigny, J. Lafitte.

Still Lighter: M. Domage, robust, hardy grower, very large and good in autumn; B. Prevost, B. Paxton, H. P. Madame Furtado, quite new; Madame de Cambaceres, one of the very best, and B. Catherine Guillot, quite new.

Rose with pinkish character: H. P. Anna Alexieff, Comtesse de Chabriland, B. L'Odier, H. P. Duchesse d'Orleans, most excellent; Belle de Bourg la Reine, new; B. Apolline, not a show rose, but excellent in the garden; H. P. Madame Knorr, autumn flowerer, and William Griffiths.

Pink and light pink : Auguste Mie, adame Vidot, B. Pierre de St. Cyr, and N. comtesse d'Avergne, T.'s Goubault and ougere.

Flesh, and blush and whites : B. S. de almaison, Queen, T. Duc de Magenta, aged with rose, quite new; Devoniensis, ombreuil, George des France, Narcisse, loire de Dijon (the best rose grown), with

Malmaison, C. Mrs. Bosanquet, N. Aimee Vibert, and La Biche.

Perhaps the experience of other amateurs may be able to add to this list, particularly in rose-coloured varieties, but I do not think any of the above in their line of character and colour for all purposes can be surpassed.

Homerton.

PRIOR.

PROPAGATING BEDDERS, ROSES, FERNS.

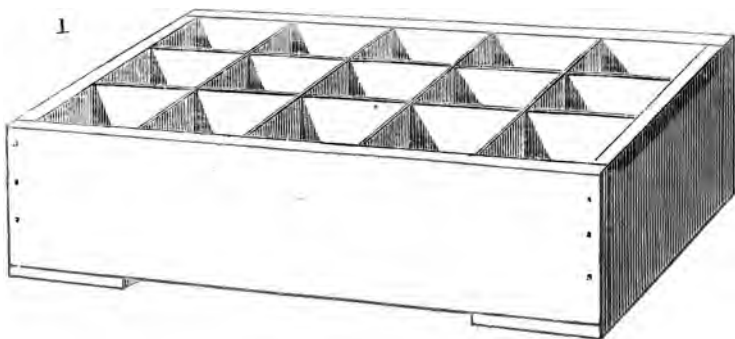
Our veteran gardeners are now getting air frames and hot-beds to work for an ancient routine of spring propagation.

would drive some of our Waltonian ends crazy to see the way in which plants are manufactured with the help of airy frames, lights adapted to the Hibernian style of ventilation; that is, with very little glass in them, and a few loads of dung and leaves ready to run to a burning heat at a day's notice. Given good lights, there is nothing to equal dung-heat for this sort of work; it is regular and moist, and the majority of plants grow in it more vigorously than in any other kind of heated atmosphere, not excepting even that of a propagating house. People come to Waltonian and other cases for convenience. Two or three thousand plants may be raised in such a contrivance easily, but generally a few hundreds are all that are wanted, and the cases enable the work to be carried on in the dwelling-house or greenhouse by those who could neither manage a dung-bed, nor venture to part off the end of a house for a tank to propagate upon. I made myself familiar with the Waltonian expressly that I might be able to do justice to it as an invention adapted to the class of amateurs who read books; and I hold to it still, because having taken so much interest in it, it has become quite a favourite, and on the 1st of February I shall set mine to work as usual with Palmer's metallic wick candles. As the Waltonian must give way to other subjects, we cannot go on for ever talking about the same thing—I will here mention, as an encouragement to possessors and intending purchasers of cases, that in the spring of 1861 raised by means of Palmer's candles, and the course of a few weeks, so many plants that in certain articles I kept two nurserymen going with stock for bedding, besides committing a few barrow-loads of plants to the muck pit, over and above supplying myself with everything needful. But whether by dung-bed, Waltonian,

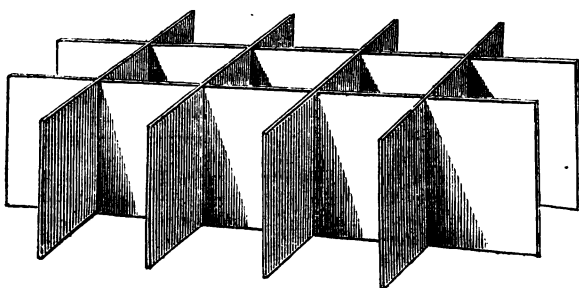
Rendle's tank, or whatever process, this fact must be borne in mind—that before cuttings are taken from bedding plants that have been kept for the purpose, they must be brought into active growth, and made to produce new shoots for the purpose. I mention this matter first, because at this time of year a number of new readers are generally added to our ranks, and the first mistake of beginners when they make an attempt at propagating is to begin to cut the plants up without first making sure that they are in active growth. When I see an instance of misconception, and false practice founded thereon, I usually conclude that there are hundreds of similar cases which a word of advice in print might reach; and a case of this kind is before me now, where some hundreds of last year's shoots were cut from verbenas, geraniums, etc., and put in over a brisk heat, and they all rotted to a pulp in a few days. Get the whole stock from which cuttings are to be taken in a brisk state of growth first, then take off the shoots that are two or three inches long with a heel to each, dibble them into sand and they will root almost instantaneously.

Last year I grew a prodigious quantity of a new lobelia, which was supplied me by Mr. Thompson of Ipswich, and I have a great heap of seed from it for this season. It is called "*Lobelia erinus marmorata*," and strange to tell, it is omitted from Mr. Thompson's list this year. This lobelia is a charming thing to form broad bands round the margins of beds; and as I had it in a zone two feet wide round a bed of American shrubs, it was a most beautiful sight. But it must not be grown by those who can tolerate only a blue lobelia: the large blossoms of this variety are variously marked with blue spots on a cream ground, or with cream spots on a blue ground; the effect of the mass is a blue gray, and it will do admirably where the pure blue of *speciosa* is not wanted. It is an immense advantage to amateurs of limited

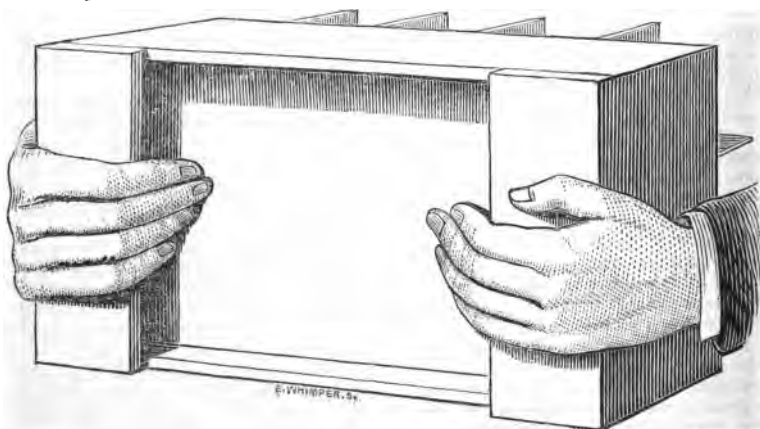
1



2



3



opportunity and experience that very many of the most esteemed bedders may now be raised from seed, as these lobelias can, with the greatest certainty. We have *Lobelia erinus compacta*, light blue, and very dwarf, *L. E. ramosoides*, deep blue, and still unsurpassed as a bedder; *L. E. speciosa*, the Crystal Palace variety; *L. ramosa*, the branching kind, splendid, large blue flowers; after which there are no more good blues obtainable from seed. Just as with these lobelias, any quantity of *ageratum*s may be raised from seed, and they bloom as well and as early as from cuttings; cupheas the same, and there are some offered this season that ought to make quite a new feature in the gardens. Messrs. Carter have in their numerous list ten good kinds, of which the best for bedding are *eminens*, *miniata*, *cymoides*, *platycentra* (this is our old arden species), *viscosissima* and *zimpiani*, the last two have purple flowers, and are most beautiful dwarf shrubs for beds. *Abronia umbellata* has never been grown to the extent it deserves; perhaps because people put it in a rich moist soil, instead of raised beds of poor stuff; certainly where justice is done it, *Abronia* becomes one of the favourites of the gardens.

I can now opportunely call attention to a contrivance invented by my excellent friend Mr. J. Hodgkinson, of Sydenham, the object of which is to economize space and time in the work of spring propagation. One of our readers have in use, as several ones recommended and described in these pages, bottomless boxes, which being placed in slabs of slate, are filled with soil, and are pricked into them from the cutting pens, so that at bedding-out time the lifting tray of the bottomless boxes leaves the plants in a square block on a slab of slate. Mr. Hodgkinson's method is an improvement upon this process, and it is an improvement of such a kind that it is possible to award to Mr. Hodgkinson, in these pages, the praise he deserves. If our friends will adopt the method, the simplicity will at first startle them, and the utility will next afford them as much pleasure as they can expect from all the other tails of propagating this season.

In the three diagrams, No. 1 represents a box ready for use. Each compartment filled with suitable compost. The little seedlings or newly-struck cuttings are planted in the divisions singly, and at bedding-out time each plant is presented the hand in a single square block; there no division necessary, not a fibre as fine as gossamer need be injured or disturbed. The sides and bottom of the box is wood;

the divisions are thick cardboard. Suppose a fig-box with the bottom knocked out. Now across the bottom at each end, nail a strip of wood. Next cut a piece of thin wood to make a loose bottom, the full size of the box, and drop it into the box to rest on the two slips. Suppose the cardboard divisions next inserted, then by turning the box on one side, and placing both hands against the loose bottom as in Fig. 3, a little pressure with the fingers would thrust out the loose bottom and the cardboard divisions. The two slips over which the hands pass remain firm, because nailed down to the bottom edge of the box. You have only to suppose the divisions filled with plants; and Fig. 3 would explain the process of "turning out" not one from a pot, but fifteen from a box. The bottom being loose, yields to the pressure of the hands, just as the large crock in the bottom of a pot yields to the pressure of a finger if the pot is inverted. But the contrivance is not used in such a way at all. It is so engraved in order to convey an accurate idea of its construction. When full of plants it has but to be lifted on to a brick and the surrounding sides drop down and leave the soil divided by the pasteboard in the most handy position possible for operations. These pasteboards are all that remain to be explained. They at first cut to fit the box, and then are slit half-way so as to fit together firmly, the short cross pieces being slit from the side which forms their bottom edge, and the long pieces from the side which forms their top edge. As they fit together firmly, each division remains intact to the last. Then to liberate each block for planting, the cross pieces are successively removed, which frees the outside blocks, and lastly the two long slips are removed and the remainder are ready. Those who suppose this to be a frail affair are mistaken. The cardboard will last two seasons, and the wood-work a lifetime. As Mr. Hodgkinson makes them they cost nothing, the boxes are waste, the stout card is waste, and the time expended in making them is leisure. Instead of frequently having to water a number of plants in thumb pots, once in three or four weeks is often enough to water these blocks, which being in large masses are capable of resisting a degree of frost that would kill plants in thumbs or sixties. As to the sizes of the boxes our readers may adopt fig-boxes for the first attempt, then, fully understanding the system, I should advise the use of boxes eighteen inches by ten inches, which will allow of divisions three inches square in which a very large amount of soil may be placed. Those

who can obtain waste card, which is largely produced in some businesses, may grow all their bedders in this fashion, and those who buy had better get a few sheets of bookbinders' millboard.

Among the questions for propagators just now is one propounded by our correspondent "Prior," who, being a rose grower, is horrified at the idea of having to waste the prunings again this season, as he has on all former seasons. This important principle of having the sap in full action before taking cuttings has a capital illustration in the propagation of the rose. Wait till May, and then take cuttings from roses in a house where they have been forced, and are going out of bloom, and you ought not to lose more than one in a thousand. But take prunings in a dormant state, put them over heat, and they almost are sure to perish. That peculiar process, the formation of a callus, which *must* take place before any cutting can throw out roots, requires the sap to be in very free flow, for the callus is formed of sap in the downward course. I do not say that it is impossible to strike the prunings of roses, because it is done every year at the rose nurseries, where they never waste one inch of anything that will make a plant; but no amateur would ever succeed in raising plants to pay for the trouble of picking up the prunings, and tallying the sorts. The only chance is with a briar *dry* heat. The cuttings to be in sand, only the heel of each touching a hard tile, and the tops to be kept alive with an occasional sprinkle from the syringe. This plan may be tried by those who are *au fait* with the Waltonian. Lay the cuttings in a row across the case from front to back on the layer of sand in the tray. Run under the upper ends a thick rod or a couple of laths to raise them to an angle, then cover the ends or heels with the sand, and keep the heat to 70° or 80°, till they root or wither. Of course, moisture must be supplied; let it be in the form of a daily sprinkling of the tops, with enough moisture in the sand for the heat to rise, and no more. The other part of the case can be used, of course, in the usual way. If to be tried on a dung-bed, the heat should be fierce, and the cuttings might be thrust in in bunches aslant. If in either case they callus properly, the tops will suddenly exhibit a healthy plump appearance, and the buds will begin to start; if they are failing, the leaves will begin to dangle, and the little side spurs will fall off, in which case it will be found, on uncovering them, that they are turning black and hastening to decay.

The best practice of all for its instruc-

tiveness is the propagation of ferns from spores. "A. S.," of Glasgow, wishes to engage in this work, with a view to raise a large stock of spores from New Zealand, and I see no reason why every one of our amateur fern growers should not do similarly. In "Rustic Adornments" I have figured the simplest and prettiest method of starting fern spores—a method by which I had so many seedling ferns one season that I could have planted all the Wardian cases in the kingdom. The process begins with a salad, during the eating of which you fix your attention on the wicker flask of Florence oil, the object being to make sure of the flask. I get a collection of a dozen or two of these flasks at a time—cut away the grass with which they are bound, and fill them all with a strong potash ley. When well cleansed, I fit to each a cork and tie a string to the neck, and they are ready for use. I pour into each, with a paper funnel, about an inch of silver sand, powdered freestone, or powdered peat. Then a little water, and leave them for a day corked close.

On removing the cork, next day, it will be found that the soil is nicely moistened through, and the glass is damp inside. Now take a small pinch of fern spores, and powder them into the flasks from the finger and thumb, a very little in each, insert the corks and hang them up in any warm place. In the course of a week there will be a green tinge visible, not only on the soil, but all over the inner side of the glass. Remove them at once to a warm window, and take out the corks. It is as well to tie over the mouth of each bottle a strip of tissue paper to keep out dust, and prevent too rapid evaporation. In the course of time the seedling ferns will be visible, and as soon as they are large enough to handle, break the flasks and prick them out in shallow pans on sandy peat, and bring them on in a moist heat, to be potted as they grow large enough.

Another mode of dealing with spores is to secure a lot of Pascal's cutting pots with bell-glasses; fill each pot with lumpy peat, on which spread pure sand, and small fragments of freestone. Sprinkle the spores upon the surface, stand the pots in pans of water, and keep the bell-glasses close. There will be thousands of plants in the course of a few weeks if the spores are kept at a temperature of 70°. Another neat way is to take clean foot tiles, such as are used for paving greenhouses, lay them close like a pavement over a dung-bed at 80°, water and shut up close for a day. Then remove the light,

powder the tiles all over, first with sand, and then with spores; each tile with one kind if your sorts are numbered or tallied with chalk marks, to indicate which is which, on the back of the frame. The seedlings will grip at the sand instead of running their roots into the fabric of the ile; a mere touch will loosen them, and the next process will be to get them to grow in about two inches of peat powdered with and on the surface; from which their next move will be to thumb pots singly. I once cattered a fillip of spores of *Onoclea sensibilis* on a piece of sponge, which was then thrown on the floor under a ark-bed. The seedlings took such hold of the sponge that I had to cut up into incement each fragment with its plant rooted in it, and the process of necessity destroyed about two-thirds of the whole number. But the best method I ever used spores by was on chopped sphagnum, pressed closed in six-inch pans, all laid close together over a tank with some frame lights over, and a mat over the lights. Every plant came away with its own grip of sphagnum, and then rooted into a mixture of peat and sand immediately, and made fine plants. The same temperature will do for all alike; stove ferns, greenhouse ferns, hardy ferns, the spores of any will all start in a heat of 70°, and it is still more curious that if you like to

grow hardy ferns all their lives in a stove temperature, they will not only endure it, but attain a marvellous luxuriance; which proves to me that, though so many beautiful ferns are produced in the climate of Britain, it is not the climate proper to them; they can endure it, and therefore they keep their place in our woods, but their capability to bear stove heat indicates that they are the remnants of a vegetation which enjoyed a tropical climate here when the land was undergoing preparation for man. Other indigenous plants will not bear stove heat, and improve in appearance by it, and why should the ferns, except that it is natural to them? and their continuance under present circumstances is a matter of accident and not of a natural selection.

I hope this paper will be intelligible and useful. I have sat up in bed to write it, and a very slow and trying task it has been. On any subject, except gardening, I could not have written a word, and the doctor does not know I have written this, or he would give me a sharp lecture. My occupation just now is to bark, and I am barking with all my might. If I can get the barking done in time, I shall hope to lay before our readers next month some matters of great interest and importance.

SHIRLEY HIBBERD.

ORCHARD HOUSES FOR TROPICAL FRUITS.

II.—ORANGES AND LEMONS PLANTED OUT.

(Continued.)

The citron offers several curious varieties. The best, perhaps, is the Madras citron, and though the fruit is seldom brought to the dessert in a raw state, it makes excellent preserves and sweetmeats furnish the table when other fruits are scarce.

The lemon is so well known, and so generally esteemed in confectionary, that I need only remark, that the common variety is as good as any.

The lime, of which there are also several varieties, is used much in the same way as the lemon, and makes a pretty variety with the other fruits. The same may be said of the shaddock, but for a different reason, the fruit of the former being the smallest of the group, whilst that of the latter is perhaps the largest. The citrus should occupy the back wall, as they should be slightly shaded by the *Passiflora edulis* on the roof, and the other fruits

occupying the front trellis; it may here be remarked that they will be benefited by a very thin shading of net, in spring and early summer, until the other things afford them a natural shade.

The *Passiflora edulis* will thrive in any good soil, and may be planted in the end of either back or front border, but its roots are very encroaching; therefore, a space should be partitioned off for it, so that it does not interfere with the other plants. It may have one main stem carried under the ridge of the roof; from this lateral shoots will proceed on either side; on these the fruit will be borne. These must, every winter after the fruit is gathered, be cut back to within an inch or two of the main stem, as the fruit is only borne on the current year's shoots. The fruit, when ripe, is of a purple colour, consisting of a tough rind, within which the edible pulp is contained.

The Pomegranate (*Punica granatum*) is not alone worthy of culture for its singular and pleasant fruit; but, like the orange, has been much esteemed for the beauty of its flowers. Success in fruiting this plant depends much upon the proper ripening of the wood in autumn; consequently, the weak shoots should be thinned out, that those bearing fruit, as well as the main branches, may receive all the benefit of the sun and air circulating amongst them; those left should be closely trained to the wall or trellis, and at the winter pruning strong shoots should be shortened back, so as to get a supply of moderately vigorous young wood from every part of the tree, as only upon such is the fruit produced.

This tree thrives in the soil recommended for the orange, with the addition of a sprinkling of old mortar and brick rubbish amongst it. Liquid manure or top-dressings of old manure may be applied as for the orange, in order to keep up a moderate degree of luxuriance; too much, however, will only produce coarse, unfruitful wood.

The Guava (*Psidium Cattleianum*).—The soil for this should differ from that recommended for the foregoing, and should consist of turfy loam and peat in equal proportions, with a sprinkling of old leaf-soil and silver-sand; pure soft water only should be used for this. Pruning is only required to keep the tree sufficiently thin for sun and air to reach the fruit, and for keeping the tree in proper form. The fruit is juicy, and in consistence much like a strawberry, to which it bears some resemblance, but with a slightly turpentine flavour; notwithstanding which, it is highly esteemed by some.

The Cape Gooseberry.—This belongs to the *Solanum* tribe; notwithstanding which, its fruit, which is a yellow berry, within an inflated calyx, and ripens at all seasons, is wholesome and particularly agreeable when the palate is once used to it; it is also used in tarts. The plant may be propagated either from seeds or cuttings, and is of easy culture; in fact, apt to grow too gross, unless its roots are somewhat confined; it is, therefore, best to plant in a nine or ten-inch pot, and plunge in the border so as to cover the rim with soil; as many roots as is thought proper can then be allowed to pass over the side of the pot into the border. This plant is subject to the red spider; the syringe should, therefore, be well plied upon it to keep the enemy under. Training and tying to the trellis or pillar must be attended to, and its shoots and larger leaves be kept moderately thin by pinching.

The Olive is a low branching evergreen plant; the flowers are produced in small axillary bunches from wood of the former year; the fruit is a berried drupe of an oblong form and yellowish green colour, but turning black when ripe. Unripe olives often appear as a pickle, both at dinner and dessert; and though to those who taste them for the first time, they appear harsh, yet soon become extremely grateful, and are thought to promote digestion and create an appetite. The soil for this plant should resemble that above recommended for the pomegranate, and as this tree produces its fruit on the former year's wood, a portion of the shoots should be shortened or spurred back every winter, so as to insure a supply of wood of the proper age for fruiting. Strong imported plants should be planted, as young plants are long before they arrive at a fruit-bearing state. This, like the others, should be trained to a trellis, and its shoots kept moderately thin, so as to insure the ripening of the wood.

The Fig is a fruit as well worthy of the gardener's care as any fruit grown, for though it ripens in favoured situations out of doors, it can only be so produced for a very limited period in each year; but under glass, by using a variety of sorts, the season of their ripening may be much extended, as several varieties will ripen two crops in each season, and the choice kinds can be had in greater perfection. Young fig-trees are very gross in their habit of growth when unlimited space is allowed to their roots; consequently, not arriving at a bearing state so soon as those having their space somewhat limited. If the border for these is made three feet wide, the soil need not be more than eighteen inches deep, resting on a foot in depth of well-rammed brick rubbish; the latter is necessary both as a drainage and to prevent the roots penetrating the subsoil; even in a border thus formed, it will be proper to lift the trees every year or two, according to their rate of growth, until a fruitful habit is secured, returning them back into their places immediately, and keeping their roots near the surface of the soil. If the above plan had always been practised, we should never have heard of the malpractice of ringing, which old gardeners had recourse to; it will, however, under such circumstances, be necessary to water freely in the growing season, and even to apply liquid manure to trees some years established and carrying heavy crops, for, should watering be neglected in hot weather, the fruit will fall off before arriving at maturity. Pruning should be done in summer, and that be-

fore the season is too far advanced for the wood to ripen, and should be principally done by pinching with the finger and thumb, so as to keep all growths short and the tree compact, yet sufficiently thin for sun and air to penetrate to every branch. The sorts to be relied on for two crops are, Brown Ischia, Black Genoa, White Genoa, and Black and Brown Italian. The larger and later kinds are the Murray, the Brunswick, Brown Naples, etc. The fig in houses

is best grown as dwarf standards, unless where they are trained to a wall or trellis; even then a stem a few inches in length should be kept clear of branches, otherwise coarse watery suckers are apt to rise from about the collar of the root; and these, when they show themselves, should be rigorously kept down. As the fig is subject to red spider, copious syringings must be applied in hot weather.

H. HOWLETT.

FEBRUARY, 1862.

PHASES OF THE MOON.—First Quarter, 6th, 8h. 11m. even.; Full, 14th, 5h. 6m. even.; Last Quarter, 21st, 2h. 17m. even.; New, 28th, 4h. 40m. even.

28 Days.				Weather near London.				THE COUNTRY.	
M	D	Sun rises	Sun sets	BAROMETER.		THERMOMETER.			Rural Sights and Sounds.
				Mx.	Min.	Mx.	Mn.	Me.	
		h.m.	h.m.						
1	S	7 41	4 47	30.255...	30.114	56...	25...	40.5	Coltsfoot flowers
2	Su	7 39	4 49	30.618...	30.578	50...	27...	38.5	Leaves of honeysuckle
3	M	7 38	4 51	30.456...	30.209	48...	35...	40.5	Dandelion flowers
4	Tu	7 36	4 53	29.993...	29.808	49...	41...	45.0	Hepatica flowers
5	W	7 34	4 54	29.694...	29.433	48...	42...	45.0	Rooks begin to build
6	Th	7 33	4 56	29.361...	29.350	51...	29...	40.0	Storm-cock sings
7	F	7 31	4 58	29.508...	29.492	53...	36...	44.5	Mezereon flowers
8	S	7 29	5 0	29.516...	29.429	48...	37...	42.5	Primrose flowers
9	Su	7 27	5 2	29.995...	29.508	44...	36...	40.0	Gold crocus flowers
10	M	7 26	5 4	30.207...	30.151	45...	22...	33.5	Marsh marigold flowers
11	Tu	7 24	5 6	29.959...	29.728	40...	20...	30.0	Archangel flowers
12	W	7 22	5 7	29.643...	29.530	39...	24...	31.5	Green hellebore appears
13	Th	7 20	5 9	29.938...	29.556	41...	20...	30.5	Creeping crowfoot appears
14	F	7 18	5 11	30.059...	29.726	45...	38...	41.5	First notes of chaffinch
15	S	7 16	5 13	29.645...	29.467	54...	40...	47.0	Oniscus asellus
16	Su	7 16	5 15	29.711...	29.571	55...	35...	45.0	Hedge-sparrow sings
17	M	7 12	5 17	29.788...	29.546	57...	35...	46.0	Moles become active
18	Tu	7 10	5 18	29.604...	29.532	57...	32...	44.5	Jungermannia fructify
19	W	7 8	5 20	29.608...	29.578	52...	27...	39.5	Buds of early speedwell
20	Th	7 6	5 22	29.594...	29.379	50...	40...	45.0	Tomtit and skylark sing
21	F	7 4	5 24	29.462...	29.296	46...	40...	43.0	Thrush sings
22	S	7 2	5 26	29.614...	29.566	54...	38...	46.0	Flocks of wood pigeons
23	Su	7 0	5 27	29.533...	29.500	48...	40...	44.0	Blackbirds sing
24	M	6 58	5 29	30.007...	29.746	45...	36...	40.5	Leaves of crimson crane's bill
25	Tu	6 56	5 31	30.153...	30.078	44...	34...	39.0	Ground beetles appear
26	W	6 54	5 33	30.106...	30.086	51...	25...	38.0	Gooseberries begin to leaf
27	Th	6 52	5 34	30.064...	29.816	52...	37...	44.5	Butcher's broom flowers
28	F	6 49	5 36	29.785...	29.745	51...	36...	43.5	Elm trees flower

NOTES FOR THE GARDEN.

KITCHEN GARDEN.—Continue to force rhubarb, sea-kale, and asparagus. To grow early potatoes, see No. 10 of the FLORAL WORLD. Sow a little of everything on warm slopes. Plant garlic, chives, shallots, onions for seed, horse-radish; sow in heat celery, tomatoes, and capsicums.

FRUIT GARDEN.—Strawberry beds often bear as well, if made up early this month, as those from autumn plantings. If the autumn was lost for such work, plant at once, on rich, firm ground. Bush fruits may still be planted and pruned, and all pruning of trees not yet attended to, should be got over at once, and may be done when the weather does not allow of any work on the ground.

Grafting should be performed as the weather permits, but if scions are obtained before they can be used, thrust them into the ground in bunches, with a tally to each, and they will keep a month, if necessary, and usually take better, if so kept a week or ten days before being put on the stocks.

FLOWER GARDEN.—This is the best season for making box, and other live edgings. Saxifraga hypnoides makes a beautiful green edging; thrift is, perhaps, one of the worst that can be used; daisies make a pretty edging during the spring months, but are generally shabby all the summer. The sheep's fescue grass is now coming into use for edging, and the way to use it will be found described in No. 3 of the FLORAL WORLD.

Plant hardy herbaceous plants of all kinds for border decoration. Plant ranunculuses and anemones between the 1st and the 20th. Top-dress auriculas, pansies, carnations, and roses, to strengthen the bloom, and give all plants under glass as much air as the state of the weather will permit.

GREENHOUSE AND STOVE.—Begin to strike cuttings of petunias, geraniums, verbenas, etc., for bedding out; put dahlia roots in a gentle heat, to break for cuttings, and commence the general work of spring propagation. A Waltonian case will be found of great service in striking cuttings and starting pans of seed, even where there is plenty of glass and means of heating. For the most simple method of managing one, see No. 9 of the FLORAL WORLD. Tender plants, that have

been kept in cold pits, should be looked over, and kept just moist, without subjecting them to damp. Strong, ripe cuttings of geraniums, that were struck round the sides of pots in autumn, need not be turned out till next month, unless you can give them good greenhouse treatment, in which case, get them singly into small pots, and shift on as fast as their new roots touch the sides. Sow tender and hardy annuals of all kinds in gentle heat. *Deutziascabra*, *Weigelia rosea*, and *Forstythia viridissima* are good plants to force this month, with double flowering plums and peaches, and pelargoniums. Look out for green-fly among cinerarias and other soft-wooded plants. Temperature of greenhouse, 45° at night, to 50° and 55° by day, with a rise of 5° for sun-heat.

TO CORRESPONDENTS.

CATALOGUES RECEIVED.—"Carter's (261, High Holborn) Gardener's and Farmer's Vade Mecum, 1862." Here are 120 immense pages closely packed with, first a list of 2718 varieties of flowers, seeds, lists of vegetables and farm seeds, a calendar of garden work, and a calendar of farm work, notices of Messrs. Carter's seed farms and nurseries, figures of novelties, and short essays on special garden subjects: a tremendous mass of information, and, we are bound to add, equally appropriate and good.—"W. Thompson's (of Ipswich) Catalogue of Flower Seeds, 1862." Our readers know Mr. Thompson as an assiduous collector of novelties, especially in annuals and hardy herbaceous plants. This catalogue contains many such choice subjects, and Mr. Thompson renders it easier for amateurs to select, by rejecting those varieties which are not to be relied on for persistency.—"B. J. Edward's (222, Strand) Catalogue of Flower Seeds and Supplementary List." The two together afford a complete view of the several departments, and everything an amateur may require.—"Prince's Descriptive Catalogue of Foreign and Native Vines grown at the Linnean Gardens, Flushing, New York." Remarkably interesting for the list of American Vines.—"Sutton's Amateurs' Guide" is full of valuable information.

PEAR TREES UNPRODUCTIVE.—*Carshalton.*—Pear trees failed everywhere in 1861, so we cannot hope to offer any special advice on your case. If the trees are in good health, they will bear according to the favour of circumstances. There was scarcely a bushel of pears to be seen all round London last year, except in orchard-houses, and even our old Swan's Egg standards were barren.

GERANIUMS IN A TURF PIT.—*Promising Pupil.*—We are gratified almost every day with such accounts as you give. Your case, raising bedding plants by the thousand, without hot-bed, or anything better than a *turf pit*, is a good balance against some other cases of readers who have endeavoured to follow us for years, and yet cannot now root a rose cutting. But these unfortunates are of the sterner sex, and some of them consider about half the FLORAL WORLD to be the work of a fertile imagination. We confess we don't care what they think when such letters as yours come to hand. The geraniums that are making blanched shoots had best be put in the light at once. If you can put them in a hot-bed next month you may

first prune them, which will get rid of the weakly shoots, and induce a new growth of strong green foliage. Let them have water at once. *Phlox Drummondii* had best not be planted out till May. The manual was not published.

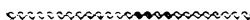
EXOTIC FERNS.—*Subscriber.*—These should be repotted when just about to commence their new seasonal growth. The soil must depend upon the species, but as a rule turfy peat two parts, and sandy loam one part, will grow stove ferns well. Some like rotten wood, and they are all partial to leaf-mould. There is no cheap work on exotic ferns. Mr. Lowe's work in six volumes is the best yet produced. The price is about four guineas.

SELECTIONS.—*A. S.*—Six achimenes: Ambroise Verschaffelt, Belmontiensis, Chiriti, Estelle, Carminata splendens, Sir Treherne Thomas. Six calceolarias: Albira, Ajax, Gem, King of Sardinia, Desirable, Lady Franklin.

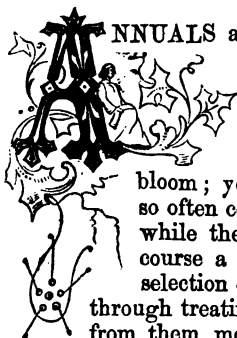
CHIMONANTHUS FRAGRANS.—*T. E.*—Your plant behaves itself properly. It sheds its leaves at a proper time, and grows again when its season returns. When it is a few years older, it will bloom, and then will pay to force, but there would be nothing gained by forcing it now.

VARIOUS.—*W. W. F.*—We think your gardener in the right. A green trellis against a buff wall will be admired for a week, and then abhorred. Paint it to match the wall as closely as possible. Hollies may be planted during April and May, as well as during August and September. If we had recommended "Town Garden" and "Rustic Adornments" somebody might have charged us with puffing our own wares, but when a gentleman is compelled to send back Kemp's book because useless, and finds that our books afford the very information he requires in laying out a new place, we cannot be wrong in calling attention to the fact, and advising those who do not possess the two books just named, to make sure of them at once. "Rustic Adornments" is nearly out of print, and we have determined not to reprint it, so those who really want it, must make sure of it while copies exist.—*Sut.*, *Gravesend.*—One of the portable cylinder stoves will answer your purpose, and cost about 15s. to 18s.—*S. S.*—Mr. Hibberd has been laid up since the 19th, and has been unable to attend to your request. Every letter addressed to the FLORAL WORLD has been replied to.—*C. D. B.*—We never had transactions with the house, and know not of its whereabouts.

THE
FLORAL WORLD
 AND
GARDEN GUIDE.



MARCH, 1862.



ANNUALS are grown everywhere, and almost everywhere condemned. They are variously pronounced "trashy," "flimsy," "unsatisfactory," and "not worth a place in any garden." But the condemnation is never pronounced till some time in July, when most of the popular kinds of hardy annuals go out of bloom; yet when spring returns again, the people who have so often condemned them sow again, and as certainly rejoice, while the bloom lasts, at their freshness and beauty. Of course a few real causes for grumbling occur, through the selection of kinds incapable of producing the effect desired, through treating them badly, and, worst of all, through expecting from them more than they are capable of accomplishing, more than they profess by their exponents to be likely to accomplish. But our lists want revising throughout, and materials for the revision are accumulating fast, and we may hope to see such a purgation as has been effected in catalogues of roses. Our reports in the "Garden Oracle" on annuals grown at Stoke Newington will be not only valuable to those who possess the several issues of that work, but they will afford material towards a correction of the catalogues, to the exclusion of ineffective kinds, and the placing prominently before the public those which are really showy, and adapted to ornamental purposes. But the cultivators must do justice to them, else the corrections of catalogues will have but half their proper value. The seeds must be thinly sown on ground properly prepared; the plants must be thinned in good time, and must have water if needful, and such other attentions as are implied in the word "cultivation," and when the annuals have had their day, instead of abusing their weedy and seedy stems, it will be in better taste to clear them off the ground, and supply their places with plants that will bloom to the end of the season. If we are asked what would best suit to follow annuals, we should say "annuals." When the early blooming kinds are over, the cultivator should be ready to supply the vacancies with stocks, asters, balsams, phloxes, helychrisums, portulaccas, zinnias, and others that may

be had, either late or early, at will, but which cannot be put out in the open ground till the latter end of May, or early in June. Failing these, there is the old resource of bedders, and unfortunately a large proportion of the inhabitants of these isles have an idea that geraniums, verbenas, and petunias, are the only plants in existence capable of producing a gay garden.

In former remarks on this subject, we have dwelt upon the botanical uses of annuals as illustrating classes and orders of which we have few other representatives. We have nothing now to say on that subject; we are thinking of colour, and of colour only. It is desirable, then, that the cultivator of annuals should know what *not* to grow, and if the reader have at hand any of this season's catalogues, we advise that a pen be run through the names of the subjects which we shall indicate as of no use. Taking them alphabetically, we must condemn *Adonis æstivalis*, *Anagallis Indica*, *carnea*, *fruticosa*, *Argemone Barclayana*, all the *Calendulas*, *Clarkia pulchella*, *Tom Thumb*, *Cleome arborea*, *speciosissima*, and *viscosa*, *Cotula aurea*, *Commelina cœlestis*, and its varieties; all the species and varieties of *Cynoglossum*, all the *Daturas* except *Carthageniensis* and *Wrighti*, and *chlorantha flore pleno*; Mr. Laxton's and Captain Clarke's mule pinks, *Eutoca multiflora*, *Wrangleana*, and *viscida*, *Gaillardia aristata*, *Boesselaeri*, *lutea*, *Richardsoni*, and *Wellsiana*; all the species and varieties of *Geum*, all the *Gilias* except *achilleæefolia*, *capitata*, *nivalis*, and *tricolor*; *Godetia bifrons*, *insignis*, *lepida*, *purpurea*, *tenuifolia*, *viminia*, *venosa*, and *Widenovi*; all the *Hawkweeds*, well named as they are; all the *hedgehogs* and *caterpillars*, about which our grandmothers made such a fuss; all the *Linarias*, *Lupinus Guatemalensis*, *Hartwegi*, *hirsutissimus*, *Moritzianus*, *heterophyllus*, and *micranthus*; remembering that *Lupinus Dunetti superbus*, *hybridus*, *insignis*, *Cruickshanki*, *subcarnosus*, and two or three others, are worth a place in a prince's garden; all the *Malopes* and *Malvas*, all the new *Maurandias*, all the *Nigellas*, and *Nolanas*, *Oenothera cuprea*, *Jamesi*, *odorata*, and *Sellowiana*, *Perilla ocymoides*; *Podolepis auriculata*, *chrysantha*, and *gracilis*, *Schizanthus chilensis*, *gracilis*, and *venustus*. Among these are many very pretty and interesting plants; but we have others that beat them, and there are too many good things now submitted to the notice of gardeners for any merely interesting plant to be tolerated where a gay show is in reality the desideratum.

Among those to be recommended we will first think of the hardy border kinds. Here we have *Clarkias*, *Escholtzias*, *Calliopsis*, *Candytuft*, *Collinsias*, *Kaulfussias*, *Larkspurs*, *Leptosiphons*, *Silenes*, *Nemophilas*, *Saponarias*, *Viscarias*, and a hundred others, really beautiful when in bloom, and worthy of culture in extensive breadths on the true bedding system, and not without interest as botanical examples. Among these the most beautiful is the double *Clarkia pulchella* raised by the Messrs. Carter, and awarded a first-class certificate by the Floral Committee last year. This produces a noble flower double the size of the species, of a rich Magenta colour, and it is so enduring that a bed of it will hold its flowers gaily till very near the first of August, provided the soil is rich, the seed sown early, the plants thinned while in the seed-leaf to three inches apart, and thinned again three weeks afterwards to six inches apart. We know of nothing among hardy border annuals to surpass this double *Clarkia*.

For those who like sweet-scented border flowers there is the old yellow *Lupin*, of late years relegated to the cottage garden, but good

enough for patches in any border, and not unworthy of a bed, to form a clear mass or band of yellow; like the song of the nightingale, though very sweet, it is of short duration; but the most sweet-scented of all border flowers is *Amblyolepis setigera*, a yellow flower of no very great beauty, but of an all-powerful odour, as it scents the air for hundreds of feet about the spot, and the very best of all plants to grow under windows, near arbours and garden seats, to surpass all patchouley and lavender scents, in which of late years the ladies indulge so freely. Another useful annual of the old school is *Centranthus macrosiphon*, the valerian of the old gardens, a glowing flower when seen in masses on the face of chalk cliffs, where it is quite at home, and therefore well adapted to chalky districts. Here, in the alphabetical progress, we come upon the showy tribe of *Dianthus*, and since *Heddewigi*, *laciniatus*, *hybridus atropurpureus*, and *Verschaffelti*, the range of ornamental gardening has been extended almost indefinitely, for people of slender means and few facilities. Grown early in pots under glass they are sure to bloom the same season, and give an endless variety of crimson, scarlet, and ruby tints, many of them worth keeping as perennial plants, to propagate by cuttings, and all of them showy, and fit for the best beds or borders in any garden in the kingdom. Mr. W. Paul, of Waltham Cross, has a dwarf bedding variety of *Heddewigi*, which is unsurpassed for beauty in the whole range of bedding plants. *Isotoma axillaris*, and *Topetræa alba*, are the most beautiful hardy annuals for working into ribbons, the flowers of the first rivalling those of *Lobelia speciosa*, those of the second snowy white; the habit of the plant neat and uniform, and well adapted for a second row to variegated arabis. A great advantage in the culture of these *Istomas* is, that they may be cut back when getting seedy, and a second bloom produced, so as to continue the plant in its full beauty to the end of the season. We must single out from the *Leptosiphons*—which are all pretty, neat, and interesting annuals—*Leptosiphon aureus*, an exquisitely beautiful range flower, of the size of a shilling, produced in great abundance, the plant being dwarf and neat, and suited for a front line. Among the *Nemophilas*, our old friend *insignis* holds its place, as ever; but for choice purposes, the new variety of *atomaria*, called *Nemophila atomaria culata*, is a gem of the highest value. The pale blue, gauze-like flower, marked at the base of each petal with a large spot of black, which forms a black ring around the eye, in the centre of each flower; the sample we saw last year was supplied by Mr. Thompson, of Ipswich, but it is now generally distributed through the trade, and though ineffective on the road, is a charming subject for culture in pots or pans, for the drawing-room and conservatory. The poppies have been so much improved, that except for their unmistakeable foliage and seed-vessels, it would be hard to determine the relationship of the corn poppy with the *picotee*, and *cony-flowered* varieties; these are indeed most beautiful, the colours various, delicate, and pure, the fringed petals and the vivid stripes giving them a beauty which is quite unique. The *Saponarias* have never declined in popularity, and the beautiful *Calabrica*, with its myriads of little lively pink blossoms, has a companion now in *Calabrica alba*, a pure white; nothing can surpass these for beds and the front lines of ribbons. We must go back to the cottage garden for another good friend—*Venus's looking-glass* (*Campanula speculum*), which has been kicked out of fashionable gardens, because cheap and common. It is one of the very

best annuals we possess, and ranges well in character with another cheap annual we have often recommended—Venus's Navelwort (*Cynoglossum inifolium*): the first a glowing purple flower, with a clear white eye; the other white, with silvery foliage. Whoever is about to sow annuals must include these in the list, or miss the proper enjoyment of this perishable class of flowers. The showy annual chrysanthemums are justly acquiring popularity. *Chrysanthemum tricolor venustum* would make as fine a bed as any plant at present favoured by fashion. It is not so hardy as the Californian annuals, and must be sown under glass for an early bloom; But if sown in the open ground in April, it will soon make up for lost time, and bloom till near the end of the season. The flower is boldly marked with deep crimson banded with yellow, centre crimson brown, the habit dwarf, and the plants one mass of bloom during the whole of July, August, and September. *Chrysanthemum Burrigeanum* merits equal praise; the flower has a snow-white ground, brown crimson centre, and belt of clear canary yellow. To make the most of these showy chrysanthemums, they should be pinched back when about four inches high; they will then throw out side-shoots, and each plant will cover a square foot of ground with glowing flowers. *Silene armeria*, one of the oldest of the annuals in our present list comes as near to what we understand by "Magenta" as any flower in cultivation. Its neat slender stems continue for about eight weeks to produce a succession of small richly coloured flowers in close trusses, and it is undoubtedly the best of the catchflies for ribbons. A most suitable plant to combine with it for a mass of yellow is *Oenothera Veitchii*, a dwarf plant of rather delicate habit, which produces an immense profusion of neatly-formed clear yellow blossoms. These should be sown where they are to bloom, and be thinned in good time so as not to suffer by crowding. The *Viscarias* come into the same category, and though there are several new ones, we must give the preference to the old *V. oculata*, and refer those who wish for information on the newer kinds, to the "Garden Oracle" for 1862. But the grandest colouring it is possible to accomplish by means of annuals may be attained by the use of the two candytufts on which reports have been made in the work just referred to. *Iberis Kermesina* is the nearest approach to a rich crimson ever accomplished in this class. We have used this to furnish a bed in a conspicuous place three seasons in succession, removing it long before the bloom was over, to make room for a succession. As we have many times recommended it, and heard no complaint, we imagine many of our readers have adopted it and found it as useful as we have pronounced it to be. Last year we tried a purple candytuft, sent out by Messrs. Carter, and this proved as good in its way as *Kermesina*, supplied by Messrs. Henderson. The colour of this was a rich purple, and the variety had been most carefully bred from a fine strain, for the trusses were large, and there was a vigour in the plant, which evidenced most careful breeding. Any who save seed from choice varieties of popular annuals should be most careful to destroy every plant in the seed-piece that shows a poor colour or a weak habit, or there will be a speedy reversion to the original type, and the variety will be lost. These are all true bedding annuals, and as worthy of being extensively used in geometric gardens, as well as in raised borders, as any of the favourites which bear the name of "bedders," almost exclusively. We pass over many others that are well known, because there is nothing

new to be said respecting them, except it be to use them well, and only blame the seedsmen when proper measures have been taken with the seed, and only blame the flowers when the cultivation has been according to reasonable prescription.

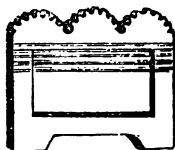
Plants with ornamental foliage are justly popular, because attractive during the whole of their career. With ordinary flowers we must wait till they bloom before we have any effect, and when out of bloom they are once more unattractive; but plants with coloured foliage are beautiful as soon as they are visible, and that is one good reason for the popularity of *Perilla Nankinensis*, and *Atriplex hortensis rubra*. It must be remembered that the last-named pet is very short-lived, and will not, under any circumstances, last the season through. We have adopted the plan of replacing it with *Perilla*, which can be propagated from cuttings any time after it is of sufficient size to furnish cuttings, and if taken early in July, they will be rooted in time to plant out when the ruby spinach has had its day. *Chenopodium atriplicis*, which Messrs. Henderson condemned in their 1861 catalogue, we have proved to be one of the most beautiful of all tropical-looking plants. It must be sown in very sandy compost, in well-drained pans, under glass, be twice transplanted, first to thumbs, and then to sixties, and be grown to a height of from two to five feet, and be frequently pinched in; it is then a rival to *Humea elegans*, the stems and leaves richly powdered with crimson, and it does not show a trace of green till quite the end of the season, when it begins to ripen seed. A valuable addition to this class is *Amaranthus melancholicus ruber*, introduced last year by Messrs. Veitch, the large leaves being richly coloured with crimson and bronze. *Amaranthus bicolor*, again, has showy foliage, brightly marked with gold yellow, and the flowers are as attractive as *Amaranthus* generally. The Brazilian, and even some of the garden beets, are worth sowing in mixed borders, as it is an easy matter to remove from a patch any that are less attractive than the rest; and among the Brazilian beets are varieties of foliage little less attractive than that of the Cannas. A gem of this class is *Oxalis corniculata foliis atropurpureis*, the small clover-like leaves delicately stained with crimson, and the plant best adapted for a front row of a foliage ribbon. We have said enough, perhaps, to keep our readers at work in selecting and sowing annuals for a month to come, and may defer the remarks we have to offer on other classes of annuals till next month; but we must add that no collection will be complete without *Gypsophila muralis*, a slender, tiny-flowered plant, that forms a charming tuft in a pan for the drawing-room. *Fenzlia dianthæflora* is of the same class, too delicate for the borders, yet so exquisitely beautiful, it would be a shame to pass it by.

EDGING TILES.

IN town gardens it is often found impossible to maintain a live edging in a decent state for any length of time. The shade of trees and walls and other circumstances render that best of all edgings, the dwarf box, of no use whatever. In this difficulty various kinds of edging tiles have been

largely used, and we ourselves recommend Hogg's Edging Tile and Loomes's Cable Edging. But good and cheap as these are, they are not entirely satisfactory, and there has been hitherto no choice but to use Ransome's imperishable stone, which no weather will injure, or the cheap tiles,

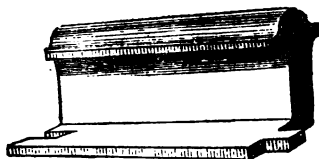
which are not entirely frost proof. It is a matter of no small moment what edging shall be put down in gardens where box does not thrive, or where it is objected to as harbouring vermin. If the soil is very dry, Loomes's Cable edging answers very well, and is cheap and respectable. But in damp soils, these and *all other* tiles suffer damage by frost, so much so that in our own garden we have this season had to take up a whole length of Loomes's cable and replace it with box, owing to the splitting into fragments of about a third of the whole number of tiles by the action of frost. Messrs. Kilner Brothers, of Thornhill Lees, near Dewshury, Yorkshire, have just brought out a glass edging, of which we



No. 1.—Length 9 inches. Weight 3½ lbs.

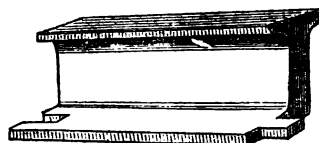
have samples before us. The designs are neat and appropriate, and the "tiles," if we may so call them, are substantial castings of dark green glass, three-quarters of an inch thick at the sides, and thicker in proportion at the mouldings. The subjoined cuts will give an idea of the patterns. Each "tile" is nine inches long, and numbers 2 and 3 are formed with soles which fix them under the walk, and with insertions by which they are locked together and

rendered immoveable by any garden work or traffic. It is obvious that in addition to their neatness of appearance, these glass edgings are capable of resisting any amount



No. 2.—Length 9 inches. Weight 5 lbs.

of frost, through the impervious and unabSORBENT nature of the material. It is the absorption of water that causes the rifting asunder of the clay tiles during frost, and in the adoption of glass there is a manifest advantage over all porous materials. As



No. 3.—Length 9 inches. Weight 5 lbs.

notices of new inventions usually bring us many inquiries respecting prices, etc., we must at once refer our readers, for any further information to Messrs. Kilner, Thornhill Lees, near Dewsbury, Yorkshire; or, 48, Upper Thames Street, London, E.C., who will, we have no doubt, furnish a list of prices to any one who will forward stamped envelopes for the purpose.

DISSECTING LEAVES.

I HAD intended, some eighteen months ago, when you first gave your readers instructions for preparing skeleton leaves, to have written to you on the subject, and informed you of a speedier and more agreeable mode of preparing these beautiful objects; but at that time professional duties interfered, and it was forgotten, until my attention was recalled to the subject by the article in your present number. Some years ago, when the preparation of skeleton leaves was first introduced, I knew that not only was much valuable time lost in these preparations, but that the effluvia arising from the decayed vegetable matter rendered this mode an unpleasant task to many ladies, I made a number of experiments, and I found that these skeleton leaves could be prepared in one day as perfectly as those

that occupied months in their preparation. My process was as follows:—I made a solution of caustic soda, of the strength of one to two ounces of the caustic soda (the strength must depend upon the kind of leaves to be prepared; those that are of a thick leathery nature, as the camellia, require the strongest, while those of a soft pulpy nature, as the geranium, will do better in a weaker solution), dissolved in one pint of boiling water. When cooled to 150°, I introduced a quantity of carefully selected leaves or seed vessels, and I then placed them on the hob beside the fire, or in a common kitchen oven (where the temperature ought not to rise above 180° nor lower than 100°); they are kept there for twenty or twenty-four hours, when I carefully removed each specimen, and placed

it in a soup-plate filled with cold water, and by gently rubbing it with a camel-hair brush, the pulpy matter was easily removed without injury to the delicate fibro-vascular network. Of course in such an operation where dexterity is to be acquired only by practice, the tyro must expect some failures before cleansing a perfect skeleton. The skeletons at this stage of the process are of a dirty brownish colour, but they can easily and speedily be bleached by placing them in a soup-plate containing a solution of chloride of lime and water.

When immersed in this mixture, I added some acid to free the chlorine (a few drops of vinegar will do), and after allowing them to remain for twenty minutes, or half-an-hour, they were removed and washed in cold water. If not sufficiently bleached, the process was repeated until they were snowy white. This simple and expeditious process of preparing these beautiful objects seems to be unknown, and perhaps you will think it worthy of a place in your valuable work. M. D.

FERNS FOR THE GREENHOUSE.

"I HAVE got a little greenhouse attached to my house;—it faces the west; I intend to keep the frost out, and nothing more. I wish to grow ferns in it, but do not know what kinds to select; will you furnish me with the names of about half a hundred, which are as varied as possible, and likely to succeed in such a house?" There is only one thing which gives us more pleasure than the receipt of such a letter as that above quoted, and that is the furnishing of the information required. We know of one hothouse-builder, in the neighbourhood of London, who has during the last year erected more than fifty little houses intended for the cultivation of ferns, and therefore we hope to assist many by giving the information required by one of our readers.

There are many ferns which are usually grown in a stove, but which would give much greater satisfaction if they were cultivated in a lower temperature. Nothing induces the presence of those pests—bug, scale, and thrips—so much as growing the plant in a hotter house than it really requires. A plant that needs cleaning almost every week, while grown in the stove, will not require it at all if placed in a greenhouse, after being once thoroughly cleaned. On the other hand, it is perfectly impossible to grow some ferns in a cool house; they do very well for a month or two in summer, but as soon as autumn sets in they begin to lose their fronds—they "damp off," as gardeners call it. All the plants mentioned in the following list we have for several years grown in a house which in winter was often as low as 34° or 35°. All that it is necessary to keep in mind is, that the plants must not be exposed to draughts of cold or dry air; and, after three or four damp and foggy days in autumn, it is as well to make the house warm, and throw the top lights open, so as to dry the air a little, but let the

house get cool again before night. As soon as a frond turns yellow, it should be cut off; this makes the plant more sightly, and at the same time prevents the rot extending to other fronds which may be in contact with it. It will also be requisite to shade them from bright sunshine; it prevents the fronds turning brown along the margin while they are young, and induces them to assume a darker and healthier green. Let us now proceed to give our list, with a few remarks:—

1. *Adiantum reniforme*, Madeira.
2. *A. formosum*, New Zealand.
3. *A. capillus veneris*, Europe and India.
4. *A. affine*, New Zealand.
5. *A. cuneatum*, Brazil.
6. *A. pedatum*, N. America and India.

These Maiden-hair ferns are all very distinct and good kinds. Although No. 3 is a British fern, yet it will hardly ever succeed out of doors. No. 6 is quite hardy, but does not show itself to advantage unless grown in a pot in the greenhouse; it is herbaceous, i.e., the fronds die off in winter.

7. *Asplenium Hemionites*, N. and S. shores of the Mediterranean.
8. *A. marinum*, Europe, India.
9. *A. flabellifolium*, Australia.
10. *A. flaccidum*, Tasmania and New Zealand.
11. *A. ebanum*, North America.
12. *A. furcatum*, Jamaica.
13. *A. diversifolium*, Australia.

Of these, No. 9 creeps upon the ground, rooting at the points; No. 10 produces a great number of young plants upon the fronds; keep a sharp look-out for thrips upon No. 11, which is somewhat subject to them.

14. *Cheilanthes spectabilis*, Brazil.
15. *C. argentea*, Siberia.
16. *C. profusa*, North America.
17. *C. fragrans*, South Europe.

All small-growing, delicate, and pretty kinds, as is also the next; be careful of overwatering these, especially in winter.

18. *Cincinnatia flavens*, tropical America; fronds golden below.

19. *Cyrtomium falcatum*, China; fronds dark green, glossy; nearly or quite hardy.

24. *L. Patersoni*, Australia.

25. *Myriopteris Novæ Zelandiæ*, New Zealand; extremely delicate and pretty.

26. *Myriopteris lendigera*, America.

27. *M. myriophylla*, America.

Treat these two like *Cheilanthes*.

28. *Neottopteris Australasica*, Australia.



DAVALLIA CANARIENSIS.—THE HARE'S-FOOT FERN.

20. *Davallia Canariensis*, Madeira; called "The Hare's-foot fern," from the appearance of the rhizomes.

21. *Doodia lunulata*, New Zealand; red stems; a pretty basket fern.

22. *Lastrea podophylla*, China and Japan; hardy in favourable situations.

23. *Lomaria nuda*, Tasmania; a very striking plant,

and East Indies; "The Bird's-nest fern."

29. *Notholaena marantæ*, S. Europe.

30. *N. Canariense*, Tenerife and Cape de Verde Islands.

31. *Onychium Japonicum*, Japan; fronds finely divided.

32. *Pellaea flexuosa*, tropical America; a half-climbing fern, very distinct.

33. *P. nastada*, South Africa.

34. *Phymatodes pustulata*, New Zea-

land and Tasmania; often found there on the trunks of trees.

35. *P. Billardieri*, ditto.
36. *Platycerium elcicornes*, East Indies and Australia; grows quite as well attached to a piece of board, and hung on the wall, as in a pot.
37. *Polypodium plebejum*, Mexico; fronds small.
38. *Platyloma rotundifolia*, New Zealand; shows itself to advantage if grown in a basket.
39. *Polystichum vestitum venustum*, New Zealand; a very beautiful plant, recently introduced by Messrs. Lee, of Hammersmith.
40. *Pteris longifolia*, tropics, E. and W.
41. *P. umbrosa*, Australia.
42. *P. cretica*, tropical Asia.
43. *P. cretica albo-lineata*, Java.
44. *P. serrulata*, tropics.
45. *P. tremula*, New Zealand.
46. *P. semipinnata*, China.
47. *Todea hymenophylloides*, New Zealand; should be grown under a glass at first.

Of these, No. 45 is rather a strong grower, and should only be introduced where there is plenty of room. No. 44 would be found useful to cut for dressing bouquets. No. 43 is the beautiful variegated fern, the only one which will succeed in the greenhouse; the others require a hotter temperature.

48. *Trichomanes radicans*, the Killarney fern; should also be covered with a glass.

49. *Woodwardia radicans*, India and California; makes young plants at the points of the fronds.

50. *Dicksonia antarctica*, Australia. We have made up the half hundred by giving a tree-fern last of all, in case our correspondent should like to have one; in that case, this is the best kind, as well as the cheapest.

We have in every case given the native country of these ferns, for the knowledge of that gives additional interest to the grower, and it is a point which few of our nurserymen attend to.

LITTLE GARDENS AND FLOWERY WINDOWS.

(Continued from page 31.)

OUT-DOOR FERNERIES.

If the little garden is on the north side of the building, and thus perpetually shaded, nothing can be more suitable than ferns to furnish it with. These may be grown on a border, as other plants, or a rugged mound may be built for them. If the latter, let it look as natural as possible; let a mound of earth be thrown up as if by the hand of Nature, then let some burrs or rough blocks of wood be placed about it, as if washed there by a flood; amongst these let the ferns be planted—the larger growing sorts for the back, and the smaller kinds in recesses near the front. From arduous British kinds may be selected sufficient for the purpose; they comprise some of the most beautiful and graceful that can be grown. The following are some of the most common, and, withal, some of the most beautiful:—*Athyrium filix-femina*, lady fern; *Aspidium filix-mas*, or male fern; *A. cristata*; *A. dilatata*; and *A. aculeatum*; *Osmunda regalis*; *Scolopendrium algaris*, and varieties; *Pteris aquilina*, or common brake. Such are large growing sorts; the smaller kinds, as follows, require less room, but should be nearer the edge, or more in sight:—*Asplenium marinum*, *A. ichomanes*, *A. adiantum nigrum*, *A. lan-*

ceolatum, and *A. ruta muraria*; *Allosorus crispus*, or parsley fern; *Blechnum spicant*; *Ceterach officinarum*; *Cystopteris fragilis*; *Polypodium dryopteris*, *P. vulgare*, etc.

Ferns require no extra treatment, but a plentiful supply of water in dry weather. A free use of the syringe, while they are throwing up the new fronds, will be highly beneficial to them. Some evergreen herbaceous or Alpine plants planted amongst them will often improve the appearance of a fernery; also several kinds of bulbs, as winter aconites, snowdrops, scillas, etc., may be added with advantage. It requires but little attention to the fern tribe to be impressed with the singular grace and beauty of the foliage, and their curious mode of seeding.

PLANTING UNDER TREES.

As before observed, if the frontage be occupied by trees, and it is desired to keep them, there are plants that will grow in their shade, and exposed to the poisonous drip from the leaves. We often see the space under one or more trees which occupy the little garden, covered with a miserable apology for turf. Nothing can be more unsightly than the bare or moss-grown patches here displayed; and quite removed from any resemblance of a

garden. Grass will not make a creditable appearance at all under trees, and unless it can be properly attended as to clipping, rolling, etc., it had better not be introduced into the little garden. The edging can be made either of the dwarf-growing plants mentioned below, or of burrs, flints, or tiles. The ground should be well dug or trenched, and the following, being plants of dwarf habit, are suitable for the front of the border:—*Anemone apennina*, blue; *A. nemorosa*, or wood anemone, white; *Arum maculatum*, green; *Asperula*, or woodruff, white; *Geum coccineum*, scarlet; *London Pride*, pink; *Lily of the Valley*, white; dwarf border geranium, red; *Stichwort*, white; *Oxalis*, or wood sorrel, white; *Orchis*, red; *Moneywort*, yellow; *Marjoram*, white; *Primrose*, *Cowslip*, *Oxlip*, yellow; *Polyanthus*, various; *Daisy*, various; dwarf *St. John's-wort*, yellow; *Vinca*, or periwinkle, blue and white; also, various bulbs, as winter aconites, snowdrops, crocuses; grape, feathered, oriental, and starch hyacinths; *Scilla præcox*, bifolia, nonscripta, etc.; also crown imperials and *Martagon lilies*, these being taller. The taller kind of plants are, *Clematis erecta*, white; *Saponaria*, bluish; *Goat's-beard* spires, bluish; *Foxglove digitalis*, red and white; *Noli-me-tangere*, red and yellow; *Helleborus viridis*, green; *Solomon's seal*, green and white. All these, except foxglove, which is a biennial, and *Noli-me-tangere*, which is an annual, are perennials, and quite hardy. Most of the hardy evergreen shrubs will thrive in the same situation; also ferns, which are naturally used to the shade and drip of trees; but here, as elsewhere, nothing should be crowded, they should rather have the more room, and the syringe cannot be applied too frequently in dry weather.

WALLS.

What wall there are should not be lost, especially the sides of the house. A grape vine of the sweetwater or black cluster kind serves to cover the wall, and yield fruit, which is always useful. If they do not ripen, they are useful for puddings. An apricot trained to the south side of the house will often yield large crops of fruit, which are both useful and saleable. A cherry or pear-tree will do on the east or west side, and sometimes on the north; these should be well attended while they are growing; the young shoots should be rubbed off, all except just enough for the next year's fruiting, and they should be carefully nailed in. There are various sorts of ornamental climbers which may be preferred to the above, as *Bignonia radi-*

caus, or trumpet flower; *Wisteria sinensis*; *Virginian creeper*; *Honeysuckle*; *Jasmines*, *Clematis*, *Cotoneaster*, *Escallonia*, *Ceanothus*, or *Buddleia*, the pawnbroker's flower. These all have various merits, as coverings for the wall or portico. *Jasminum nudiflorum* flowers in the winter, and *Clematis flammula* yields a rich perfume.

Although any sort of climber will improve the appearance of a wall or cottage, nothing will disfigure either more than the same things hanging loosely and neglected. "A stitch in time saves nine," may be applied to trained trees above all things.

RUSTIC WORK.

Nothing can improve the appearance of the little garden, or exhibit the taste and skill of the proprietor, more than the introduction of a rustic vase of some kind, from the circle of burrs filled in with earth, to the vase of tasty design standing three or four feet high. It may be placed in the centre of the garden, or be built against the wall, and will admit of an endless variety of form or design in the construction, from the basket fastened on a short post to the carefully built and bark-covered piece of rustic workmanship. Filled with bedding plants during the summer, they produce a fine effect, and in the spring they may be filled with bulbs, which can be removed before the bedding plants are put in. Scarlet geraniums, with their masses of bright blooms, make quite a blaze in them. *Verbenas* continue flowering, and trail down the sides; and if the vase is filled with upright things, such trailing plants as *Maurandya Barclayana*, *Lophospermum scandens*, canary flower, *Convulvulus major*, etc., can be placed near the edges to hang over. They will require plenty of water, and sometimes a little liquid manure will benefit them, especially if the soil which is put into them be very poor. A rustic vase may be placed where there is no semblance of a garden, and will appear as a sunny spot of floral beauty where all else is confusion.

SOMETHING TO EAT.

It may be that many persons desire to have their bit of ground produce something useful as well as ornamental—that is, to furnish something for the table. It is painful to witness the many futile attempts to grow peas in a garden of twenty feet long by twelve broad. These attempts invariably prove failures, because the soil is too light and porous, whereby they have not sufficient stay in hot weather, and because the space is too much inclosed, and because they are generally sown too thick. From such like causes it is useless to attempt growing heavy kitchen crops, but

hubarb may be grown to advantage, and will always prove valuable in the spring. Sea-kale will also do well, as it will bear the shade. It may be sown in April, and grown a foot or eighteen inches apart. To fit it for use, it is merely necessary to exclude the light from it, which may be done by covering it in March with moderate sized flower-pots, having well stopped the hole in them. Where manure can be obtained, lettuces and other salads can be grown to advantage, and sweet herbs, as thyme, savory, parsley, etc., can be grown—they are always useful; but for the more heavy kinds of vegetables it seldom happens that they produce even the value of the seed, unless winter greens form an exception.

BEDDING PLANTS.

Garden frames may be sometimes very useful in the little garden, but unless they can be made proper use of, and be attended to, they had better be left out. It is quite possible to keep bedding plants during the winter in a frame, but it is necessary to bank some earth round it, thick enough to resist a sharp frost, and to attend to covering and uncovering, and giving air on every possible occasion.

Verbenas and calceolarias keep very well this way. Scarlet geraniums are apt to lose their leaves, but this does not so much matter; if the stem is kept alive, they will break out again in the spring. Heliopteres and ageratums are almost too tender, and require to be kept in a greenhouse or the window to do well; but if the latter, they should be removed at night beyond the reach of frost. Hardy plants, as pinks, carnations, auriculas, etc., in pots require the protection of a frame in severe weather; and where chrysanthemums are grown in pots, if the cuttings or offsets are potted in November, and kept in a cold frame through the winter, they will be much more forward and healthy in the spring

than if altogether exposed; for, however hardy a plant may be, it cannot bear having the roots frozen without injury, and the frost soon gets through the sides of a pot. But a frame is useful in other ways: if placed on a sunny border, an early crop of radishes may be obtained by sowing in February, or lettuces may be planted in the frame in October; they will stand the winter, and come in early in the spring. Small salad may also be raised in abundance, and many things may be preserved fresh and green when they would otherwise be spoiled by the frost. In the flower way again, the frame is useful for the purpose of raising half hardy annuals. These may be sown in a frame early in April, and be obtained three weeks or a month earlier than in the open ground. It will be found also useful in propagating, if cuttings of verbenas and some other bedding plants, also of some kinds of herbaceous plants, and the first shoots of roses, be put into pots, half full of soil, a piece of glass placed over them, and these be placed in the frame, they will not fail to root if not done before April, and they be carefully shaded. If the frame is placed on a shady border in August, it is easy to strike a winter stock of bedding plants, and also pinks and other herbaceous plants. The ground is then a natural hot-bed, and as effective as a dung-bed in March. Our plan of putting in cuttings in the month of August is to stir up the soil and mix a little sand with it, then with the fine rose of a watering-pot sprinkle the soil till it is completely wetted through, then while the ground is wet, thrust the cuttings in and put on the lights; thus we can put in hundreds of cuttings in a very short time; we do nothing more to them till they are rooted, which is in about three weeks.

F. M. CHITTY.

(To be continued.)

ON THE VARIETIES OF CUCUMBER GROWN IN THE GARDEN AT CHISWICK DURING THE SEASON, 1861.

By ROBERT HOGG, LL.D., F.L.S., Secretary to the Fruit Committee.

(From the Proceedings of the Royal Horticultural Society.)

WITH the view of proving the vast number of varieties of the cucumber that are met with in the lists of the seedsmen, I, with the consent of the Fruit and Vegetable Committee, procured seeds of every variety recorded in the catalogues, and these amounted in all to 118 reputed distinct sorts. For the purpose of carrying out the experiment effectually, the Council of the

Society gave authority to Mr. Eyles to have a long range of old pits converted into a place suitable for the purpose, and heated with hot-water pipes.

The seeds were sown on the 15th of May, in a warm hotbed, and the plants were potted off into forty-eight's. They were then shifted into twenty-four's; and lastly, on the 11th of June, they were trans-

ferred to their fruiting pots, sixteen inches in diameter.

The soil consisted chiefly of light loam, one-third rotten dung, and some burnt earth. They were then placed in the pit prepared for them, and trained to a wire trellis along the roof, each plant being allowed a single stem to reach the top of the pit. When it had attained the full length of the lights, the stem was stopped, in order to produce side-shoots, on which the fruit were all borne simultaneously. They were frequently top-dressed with good rotten dung, and liberally supplied with manure-water. The pits were heated with hot-water pipes; but the heat was only used in dull weather to prevent damp, and on cold nights.

Nothing could be more successful than the treatment to which this experiment was subjected. Of the 118 varieties, not one failed, but all grew with the greatest luxuriance, and preserved an uniform vigour and fine healthy colour during the whole period of their growth. This uniformity of condition rendered the trial all the more complete, for it could not be said that one variety had any advantage over another, or that any were produced under unfavourable circumstances.

After the most careful examination, and a patient comparison of each individual sort with every other, the long list of 118 varieties has been reduced to thirty-four. It was not by any possibility that more could be made of them; and by a judicious disregard of some of the minor characters that were allowed to determine differences, the number could with safety have been very much farther reduced.

The following are the varieties that have been found to be distinct, and the classification that is here adopted will show the relation they bear to each other:—

I.—FRUIT NOT GLAUCOUS.

Surface quite smooth.—Carter's Champion, Cuthill's Highland Mary.

Surface Spiny.—*Spines Black:* Sir Colin Campbell. *Spines White tipped with Black:* Bird's Improved Sion House. *Spines White:* Improved Sion House, Kenyon's Improved, Kirklees Hall Defiance.

II.—FRUIT GLAUCOUS, AND COVERED WITH MAMILLÆ WHICH ARE SURMOUNTED WITH SPINES.

Spines Black.—Dr. Livingstone, Frogmore Frame, Green's Lady Antrobus, Hamilton's Hero of Thornfield, Henderson's A 1, Jennings' Worcester Champion, Lord Kenyon, Mills' Jewess, Rifleman.

Spines White tipped with Black.—Ayres'

Prolific Black Spine, Hamilton's Surprise, Hamilton's Market Favourite, Kelway's Defiance, Phenomenon.

Spines White.—Butler's Eugénie, Cheltenham Surprise, Cuthill's White Spine, Dickson's Newtown Hero, Glory of Arnstadt, Godfrey's White Spine, Gun Barrel, Head's Conqueror, Himalaya, Hunter's Prolific, Improved Manchester Prize, Lat-ter's Victory of England, Lee's Prolific.

CLASS I.—FRUIT NOT GLAUCOUS.

These are distinguished by the fruit being of a bright and lively green colour, and destitute of that glaucousness or bloom which is generally found on the varieties in Class II. They are also destitute of mamillæ or warts, and are never furrowed or ribbed as those in Class II. They are sometimes called "the Sion House race."

Carter's Champion (James Carter and Co.)—Fruit a foot long, straight, smooth, and somewhat angular all round, the planes between the angles being about half an inch wide. Neck thick and short. The plant is an excellent bearer, and the fruit is solid and firm. This was considered the best of the smooth or Sion House class. *Monro's Prolific* differs from this merely in having a few white spines strewed over its surface.

Bird's Improved Sion House (C. Turner).

—Fruit fifteen inches long, with a long neck, and somewhat similar to *Kenyon's Improved*, but thicker towards the point, and having the spines white tipped with black.

Cuthill's Highland Mary (Jas. Cuthill).

—Fruit a foot long, smooth, straight, and with a neck. Plant, a good bearer and early.

Improved Sion House (Carter and Co.)

—Fruit sixteen inches long, thick, straight, and angular, like *Carter's Champion*, but differing from it in being strewed with a few short white spines. It is of a fine dark green colour, and handsome, but inclines to be coarse.

Kenyon's Improved (Smith).—A very handsome fruit, fifteen inches long, with a short and tapering neck, straight, smooth, and inclining to be ribbed, as well as covered with a very delicate glaucous bloom, indicating an admixture of the strain of Class II. It is strewed with white spines, and was considered the finest of the white-spined Sion House race. *Clarke's Wonder* (Hurst and McMullen), and *Kiplin Black Spine* (Henderson), proved the same as this; while *Henderson's Napoleon III.* was much similar, but thick, coarse, and inferior.

Kirklees Hall Defiance (Wm. Dean).—

This is a very handsome fruit, fifteen inches long, and bears considerable resemblance to the preceding ; but it is more purely of the Sion House race, and is not of so dark a colour as *Kenyon's Improved*. It was considered the second best of the white-spined Sion House race. *Robinson's White Spine* (Wood and Ingram) is synonymous with this ; and *Great Britain* (Charlwood and Cummins) is similar, but not inferior to it.

Sir Colin Campbell (Charlwood and Cummins).—Fruit resembling *Kenyon's Improved*, from which it is distinguished having black spines ; and were it not for his character, there would not be any other to distinguish them. It is inferior to *Kenyon's Improved*. Synonymous with this are *General Canrobert* (Tiley), *Robinson's Black Spine* (Wood and Ingram).

CLASS II.—FRUIT GLAUCOUS.

In this class the fruit is clothed with a hick glaucous bloom, and its surface beset with more or less prominent mamillæ, which are surmounted with spines ; in its young state it is longitudinally furrowed.

Spines Black.—*Dr. Livingstone* (Tiley).—Fruit seventeen inches long, even, straight, slender, and handsome, not at all furrowed, and with small mamillæ, surmounted with short stout very black spines ; neck scarcely discernible, smooth for four inches from the stalk. The plant is an extraordinary earler, and the fruit is of a fine dark-green colour. This was pronounced the best of all the black-spined varieties. *Duthill's Black Spine* (Cuthill) is similar to this, but is coarsely ribbed, and has large prominent mamillæ. The same remarks apply to *Master's Viridissima* (Masters). *Roman Emperor* (Batt, Rutley, and Silverlock), bears a close resemblance to *Dr. Livingstone*, and is an excellent cucumber.

Frogmore Frame (C. Turner).—Fruit fourteen inches long, straight, small, and slightly furrowed, and covered with numerous mamillæ, which are surmounted with black spines ; neck thick and tapering, about three inches long. *Butler's Extra Frame* (Butler and McCulloch), is the same as this.

Green's Lady Antrobus (Charlwood and Cummins).—Fruit fourteen inches long, even and straight, with very few and small mamillæ ; neck very short and thick, swelling out to a round shoulder. The net tapers from the shoulder to the point, and is thick throughout its whole length. *Garaway Ne plus Ultra* (Garaway and Co.), and *Sir Colin Campbell* (Turner), are synonymous with this.

Hamilton's Hero of Thornfield (Sutton and Sons).—Fruit seventeen inches long,

thick, and rather coarse-looking, covered with large and prominent mamillæ ; neck long, tapering, and rather thick, smooth four inches from the stalk.

Perfection (Turner), *Young's Champion of the South* (Charlwood), and *Ward's Great Western* (Turner), are synonymous with this ; and *Weedon's Symmetry* (Carter and Co.), though similar, is an inferior variety.

Henderson's A 1 (E. G. Henderson and Son).—Fruit seventeen inches long, straight and even, with small, and not numerous mamillæ, obscurely ribbed, and of a fine dark colour ; neck small, long, and tapering. This was considered by the Committee the second best of the black-spined varieties. *Wild's No. 1* (Wild, of Ipswich) is synonymous with this.

Jenning's Worcester Champion (Hurst and McMullen).—Fruit eighteen inches long, straight, and slender, very slightly ribbed, and with small mamillæ that are not numerous. It has scarcely any neck, and is destitute of spines for three inches of its length from the stalk. Its great fault is, that it becomes yellow at the point, a peculiarity it acquires at a very early stage of its growth. This was considered the third best of the black spines.

Lord Kenyon (Charlwood and Cummins).—Fruit eleven inches long, with a short thick neck, and a short thick round shoulder, whence it tapers to the point. It appears to be fitted only for ridge or hand-glass culture.

Mill's Jewess (Charlwood and Cummins).—Fruit sixteen inches long, straight, even, and rather thick ; obscurely ribbed, and with large, rather flat mamillæ, bearing stout black spines ; neck long and smooth. *Ipswich Standard* (Turner) and *Mitchell's Superb* (Charlwood and Cummins) are synonymous with this.

Rifleman (Tiley).—This has a resemblance to *Henderson's A 1*, but it has a long tapering neck, and is coarsely furrowed in its length. The mamillæ are prominent, and the neck is of an objectionable bronzy colour. *Dancer's Long Black Spine* (Butler and McCulloch), *Webb's Incomparable Black Spine* (Butler and McCulloch), *General Outram* (Wood and Ingram), and *Kelway's Prolific* (Wood and Ingram) are synonymous with this.

Spines White tipped with Black.—*Ayre's Prolific Black Spine* (C. Turner).—Fruit twelve to fourteen inches long, very straight, slightly furrowed, and with large prominent mamillæ, bearing white spines tipped with black. A handsome and good cucumber. *Bird's Hybrid* (Turner), *Con-*

stantino's Incomparable (Turner), *Kelway's Perfection* (Fraser, Richardson, and Goad), and *Wild's No. 2* (Wild), are all similar, but inferior to this, being much coarser.

Hamilton's Surprise (Hurst and McMullen).—Fruit eighteen inches long, straight, even, and slender. And with medium-sized mamillæ, the neck swells out well, and is smooth for the length of six inches from the stalk. This is a handsome and really good cucumber, and was considered the third best of the tipped-spined class. *Turner's Favourite* (Turner) is synonymous with this.

Hamilton's Market Favourite (Sutton and Sons).—Fruit sixteen inches long, straight, slender, slightly furrowed, and with rather prominent mamillæ; of uniform thickness throughout, the neck tapers gradually, and is smooth for about four inches from the stalk. This was considered the best of the tipped-spined section; and it possesses the best colour, the best form, and every property of a good cucumber. Not only was it the best in its section, but the best and handsomest in the whole collection.

Kelway's Defiance (Hurst and McMullen).—Fruit twenty inches long, thick and coarse throughout its whole length, and club-shaped at the point; mamillæ prominent, with black tipped spines; neck long and small. An inferior coarse variety. *Kelby's Hybrid Perfection* (Sutton) is synonymous.

Phenomenon (Butler and McCulluch).—Fruit sixteen inches long, straight, slender, even, and handsome, tapering gradually to the point; neck full and naked for three inches from the stalk. A fine cucumber, and the second best of the tipped-spined sorts. The varieties similar but inferior to this are *Butler's Surprise* (Fraser, Richardson, and Goad), *Beavis' Leader* (Flanagan and Son), *Captain Lorraine's* (Turner), *Dryham Park* (Minier), *Godfrey's Black Spine* (Charlwood), *Pike's Defiance* (Minier), *Victory of Bath* (Turner), *Sunderland Witch* (Tiley).

Spines White.—*Butler's Empress Fugenie* (Butler and McCulluch).—Fruit eighteen inches long, straight, slender, and handsome, scarcely at all ribbed, and with moderately prominent mamillæ; the neck is full and smooth for about five inches from the stalk. The plant is an excellent bearer. This was considered the best of the white-spined sorts. *Berkshire Champion* (Turner) is similar to this, but much inferior, and has a long small neck. This same may be said of *Garaway's Wonder* (Garaway and Co.), *Infant* (Flanagan),

and *Walker's Improved* (Butler and McCulluch).

Cheltenham Surprise (Turner).—Fruit sixteen inches long, straight, and rather smooth, having small mamillæ. It is thick at both ends and small in the middle, exhibiting a coarseness which is not desirable in a good cucumber.

Cuthill's White Spine (Cuthill).—This was received from two other sources besides from Mr. Cuthill, and in every case it proved to be a black-spined variety.

Dickson's Newtown Hero (James Dickson and Sons).—Fruit eighteen inches long, round, even, and straight, with a fine full neck, which is smooth for four inches from the stalk. Mamillæ rather small. A handsome cucumber, and the second best of the white-spined varieties. *Acme of Perfection* (Batt, Rutley, and Co.), is similar to this, but of inferior quality.

Glory of Arnstadt (Batt, Rutley, and Co.).—Fruit ten inches long, with a very short or scarcely any neck, and not at all ribbed. It is of a fine deep colour, and is densely covered with coarse thick white spines, so much so as to give it a bristly appearance. This is a very distinct variety from all the others, but is not remarkable for any superior quality.

Gun Barrel (Wood and Ingram).—Fruit twenty inches long, furrowed and coarse-looking; mamillæ large and prominent; neck long and slender. An inferior variety. *Clapham Defiance* (Southby) is synonymous with this.

Godfrey's White Spine (Hurst and McMullen).—Fruit eighteen inches long, straight, slender, and obscurely ribbed; mamillæ and spines very small; neck short and thick. A very good and handsome cucumber, of a very dark green colour. Synonymous with this, and quite equal to it in quality, is *Lancashire Witch* (Sutton and Sons).

Hunter's Prolific (Hurst and McMullen).—This is somewhat similar to *Dickson's Newtown Hero*, and has small puckered mamillæ, with large white spines. The spines extend close up to the stalk, and the neck is long.

Himalaya (Wood and Ingram).—Fruit eighteen inches long, straight, even, and slender; very obscurely ribbed, and with small mamillæ; the neck is thick, full, and smooth for five inches from the stalk. A handsome and excellent cucumber.

Head's Conqueror (Charlwood and Cummins).—Fruit fourteen inches long, narrow at both ends, and swollen in the middle; mamillæ moderately prominent. A common-looking sort.

Improved Manchester Prize (Turner)

—Fruit twenty inches long, thick; straight, smooth, and obscurely ribbed; mamillæ not prominent; neck very short and thick, and smooth seven inches from the stalk. A very excellent cucumber. *Californian* (McIntosh), *Champion of England* (Hurst and McMullen), *Gillespie's Hybrid White Spine* (James Dickson and Son), are similar to, but inferior to this; and *Lorraine's White Spine* (Minier), has a longer and smaller neck, and is altogether a coarser fruit.

Lee's Prolific (Turner).—Fruit thirteen inches long, thick in the middle and narrow at both ends, obscurely ribbed, and with broad flat mamillæ. A coarse-looking cucumber.

Latter's Victory of England (Hurst and McMullen).—Fruit eighteen inches long, straight, slender, and not furrowed; mamillæ small; neck short and thick, smooth for four inches from the stalk. A handsome and excellent cucumber; the third best of the white-spined varieties. It carries the bloom well at the end of the fruit. Synonymous with this are *Gordon's White Spine* (Tiley), *Judd's Frame* (Judd), *Lynch's Star of the West* (Southby), *Model of Perfection* (Hurst and McMullen), *Norman's Stetchworth Park Hero* (Dillistone), *Pride of Scarborough* (Flanagan and Son), and *Pea Green* (Wood and Ingram).

* * * These thirty-four cucumbers are all that could be reckoned distinct out of 18 varieties, and it will be seen, when reading the descriptions, that among them here are many that are not possessed of any great merit. The following sorts are those most worthy of cultivation; and as they furnish every quality and requirement which are to be found in any of the other varieties, they may very safely be chosen as best fitted to form a collection of select and distinct kinds.

I.—NON-GLAUCOUS VARIETIES.

Carter's Champion.—The best of the smooth Sion House race.

Cuthill's Highland Mary.—A good bearer, and early.

Kenyon's Improved.—The best of the white-spined Sion House race.

Kirklees Hall Defiance.—The second best of the white-spined Sion House race.

II.—GLAUCOUS VARIETIES.

Dr. Livingstone.—The best of the black-spined varieties.

Henderson's A 1.—The second best of the black-spined varieties.

Jenning's Worcester Champion.—One of the best of the black-spined varieties, but for its yellow-coloured point, which places it as the third best.

Hamilton's Market Favourite.—The best and handsomest cucumber in the whole collection, and the best of the tipped-spined varieties.

Phenomenon.—A very handsome cucumber, and the second best of the tipped-spined varieties.

Hamilton's Surprise.—A handsome and good cucumber, and the third best of the tipped-spined varieties.

Butler's Empress Eugenie.—A very handsome fruit, and the plant an abundant bearer. The best of the white-spined sorts.

Dickson's Newtown Hero.—The second best of the white-spined sorts.

Godfrey's White Spine.—A very handsome cucumber, of a fine dark green colour.

Himalaya.—A handsome white-spined variety.

Improved Manchester Prize.—A very excellent and generally useful sort, and one of the best of the white-spined varieties.

EXPERIENCES IN TOWN GARDENING.

SEND you the following jottings down as I hope they may be useful to some of our readers, and induce others to furnish some notes of their gardening experience.

I must premise that I am a very humble amateur, having not much time to spare or money to spend on a garden. I am located in the immediate suburbs of London, and my territory is about 120 superficial yards, containing my greenhouse, a span-roof, five yards square, about the contents of which I am going to write.

Your country subscribers cannot, I

think, form an idea of the destructiveness of the London atmosphere on vegetable life. The damps of winter rendered stagnant by the high buildings; the drought of summer caused by the hot walls and paved streets, and scantiness of vegetation to carry up moisture; and the smoke, at all times renders town gardening an affair of patience and skill in the management, and of care in the selection of plants suitable.

My greenhouse enjoys a fair amount of sunshine, but, except on a few bright days in March and April, when the east winds are blowing, and again in the very hottest

sunshine in summer, I find no necessity for shading it. I think much harm is done by too much shading, if any but the summer soft-wooded plants are in the house. Town gardeners must remember that there is always a sun-blind of smoke floating in the air, and the constant advice of gardening works to guard against wetting the foliage of plants while the sun is on them, is superfluous, as far as town gardeners are concerned.

The watering of plants in pots is the point where so many break down. To the query, How often am I to water my plants? no very satisfactory answer can be given; everything depending on situation, kind of soil, and the season. In summer, and while the thermometer keeps steadily above 45° or 50°, plants must have water *when they want it*; but from October till April, hard-wooded ones must have it sparingly; and, if possible, none during a continued frost, but at the same time they should never be allowed to get dust dry on any account. It is a good plan to place a number of pans on the flue, with a little earth or mortar under them to communicate the heat from the flue more readily, and to keep these filled with water during dry or very frosty weather; this keeps the plants moister and saves deluging them at a time when much heat cannot be used. As a rule, amateurs water a great deal too much in winter, without paying regard to the state of the weather. It is a good plan to slip the pots into another of the next size, in winter as well as in the hot sun, which keep the plants moister, and does not chill the roots so much from the evaporation of the water. We should recollect that in their native places, most greenhouse plants enjoy a root temperature in winter of from 40° to 45°; while in our houses, the temperature generally ranges from 35° to 45°, from which must be deducted perhaps 2° for the chill caused by evaporation from the outside of the pot. Besides which, a rise or fall of 10° in as many hours is not at all unusual in a small or ill-kept greenhouse, and is often unavoidable from the cultivator's absence. But the matter is worth reflection, since it is the great source of failure with potted plants of the tenderer sorts, and when the small fibrous roots are lost, a fine spring bloom cannot be expected, nor will the plants make their growth so early in summer, which is always desirable, particularly in those plants blooming all the way up the stems of the new wood.

I never could do much good with hard-wooded plants for the first year or two after buying them of the nurserymen, because of

the vile sour stuff they manage to grow them in. Their compost appears to be sifted peat mixed into a batter, and no crocks for drainage. For all that they manage to keep them alive, but how, is *their secret*; it is certain *we* cannot. Therefore buy your plants while the fine weather is before you. Get *small healthy ones*, not what have been cut down triennially, since the last twenty years, and then with small plants you can get most of the sour paste off the roots by poking it out with a bit of stick, and fill in again with peat and loam *unsifted*, and in nodules, with a few bits of charcoal. These hard-wooded greenhouse plants, which are not disrooted every year, as a fuchsia for instance is, require a soil which will keep open and porous for years, and there is no compost yet invented to equal peat and loam. The peat chopped, fibrous, and with the greater part of the earth shaken out, and the loam stiff for the coarser growers, and silky and friable for the weaker ones, and both at least with two-thirds in lumps, larger or smaller, according to the size of the pots.

The drainage of pots is an indispensable necessity. A 60-sized pot must have an inch of broken pots laid in carefully, so that a little soil washing down will not stop up the hole, nor the knocking out of the ball of earth to examine the roots, cause all the potsherds to fall off. There is nothing better than fibrous peat to go over the drainage, or failing that, moss; leaves are liable to rot into mould and wash down, besides harbouring maggots.

Never, if possible, use sticks, or rather never buy a plant of such an ill shape as to require a stick. It is a tedious task to bring an ill-grown plant into a good shape. Nurserymen usually allow all the first year's growth to remain on a cutting, and ever after it resembles a mop. Buy short bushy plants, or go without. But about the sticks, if you must use them have red or yellow deal, and dip the ends in hot pitch, and examine them twice a year, both to see that the ties are not too tight, and that the ends are not rotting, and turning into white threads, which in a short time will fill a pot, and destroy every root. The same with wooden tallies. Abolish them, and tie little neat ones to a branch with lead wire, and they will last as long as the plant. A good way of supporting plants, is to put a ring of galvanized wire round the pot under the rim, twisting in the wire three loops, so as to bend a little over the rim to keep it steady, and from the three loops, other wires or string may go to the top of the plant.

There are few hard-wooded plants that

require violent pruning or cutting in, but on an ill-shaped plant do not fear to practise it pretty freely, but then, if the pruning is very severe, it should go into a warm damp hospital till it breaks into shoots; or you will probably lose it. There are few cultivators to whom these notes will be useful, who can command such a place; the more reason that they should grow their plants by the rule of finger-and-thumb, or pinching in before the shoots grow too rampant. As an example, the *Cytisus* will not allow liberties to be taken with it in the way of pruning, unless well cared for afterwards, while a myrtle will force dozens of buds through even the oldest bark.

It is a good plan to have a tank of water standing near the furnace or stove, as on no account should cold freezing water be used, nor, on the other hand, water too warm. About 5° to 10° above the temperature of the house is a safe medium in winter or summer.

So far I have spoken about winter treatment principally, towards the end of which, if all has gone well, and too much fire-heat with too dry an atmosphere have not made the plants drop their bloom (a mistake many young gardeners fall into, and many old ones too, who will have their house as dry as an oven for fear they should take cold in it) the plants may receive a top-dressing, which will much assist their blooming finely. So many hard-wooded Australian plants bloom early in the year, that we can afford, and should do well, to keep a few of the tenderer a little backward, because in May, flowers get scarce, being between the early and summer blossoming time; and besides we have some cold weather in April, when it is scarcely worth while to light a fire if the glass is over 40° or 45° inside—a temperature safe enough for plants but rather killing to the blooms of *Chorozemas*, *Cennediyas*, etc.

The variety of blooms at this early season is charming, later in the summer there is nothing but fuchsias, geraniums, and balsams, and balsams, geraniums, and fuchsias, till at the end of summer one is glad almost to be rid of them. Geraniums get vulgar, the grossness of their foliage certainly does not add to their beauty; but a houseful of fuchsias is always more or less tolerable; there is a matchless grace about the flower unequalled in any other. What a fortunate thing for towns-people that it is so easily cultivated! but there is one great drawback in it—it drops its bloom; so in inexperienced hands; and here I will enu-

rate some of the causes which make this tribe appear so whimsical. Sudden change from heat to cold, or the contrary, too strong sunshine or too little, not enough water, but seldom too much in summer, when they may stand in pans in water (a thing not to be thought of with other plants), removing from out-doors into a damp house; too strong a top-dressing or liquid manure, or even a cold draught of air, or shifting into a larger pot while in bloom. Some few sorts I find will never drop a bud, and for the benefit of the intra-murals, their names are—Prince Albert and Senator, dark; Silver Swan, Sir Robert Peel, and Schiller, light. Mr. Hibberd has lately given long lists of the best, and all about them; so anything more about this tribe would be useless. Just one or two hints, however. Cut them well in, even down to three inches of the pot, for small plants; never have larger plants than your house can accommodate conveniently, never have long-legged plants in-doors, but cut, cut, cut at them, remembering that you will get as good a head at three inches, as at three feet. Standards of one foot stem do very nicely for bedding, even better than dwarfs if of pendent habit, like *Nil Desperandum*.

I have said, that removing from out-doors into a damp greenhouse is a cause of the flowers dropping. Such is unfortunately the case with most fuchsias. Now, to bloom them luxuriantly, the house must be damp and rather shaded, so if your fuchsias are put out to strengthen them and get the wood hard before blooming, which is a good plan, and often make them begin blooming earlier than they otherwise would, you must take care to take them in as soon as you can see the bloom-buds, or the change will make the blooms fall off for weeks, if left out till the buds are half grown. Every gardener should possess a syringe. Zinc ones may be got for 2s. or 2s. 6d., and brass from 7s. 6d. to 10s.; but as they last half a lifetime with care, and clean water without grit in it used, for sand very soon wears them out, it is best to buy a first-rate one at once. Those with a ball valve by the side of the jet draw easily. It is no joke on a hot day to have to use a syringe for half-an-hour if it works stiff, as all do that draw the water in through the jet only. It should be kept well oiled at the piston. Some are now made with a reservoir of oil in the piston. Roses are useless, as a jet, by the application of the fore-finger or thumb, can be regulated from its full force to the finest dew. In the height of summer it should be used in the greenhouse once or twice a

day, but always late in the evening, and generally in the morning. This will keep soot at a distance during the summer, but in winter, when it cannot be used, a little time must be given to washing the leaves of the plants with a soft sponge and warm water, with, for camellias, and such like leaved plants, a little soap well washed off. Nothing but washing with a sponge will get the filth that collects during winter off. If the evergreens in the garden received a little such attention, they would repay it amply with improved looks and health.

I now come to the list of plants which I have actually growing, and which may be relied on for town greenhouses, begging your readers will bear in mind that my house is not particularly well kept from my absence from home during the greater part of the day. The temperature ranges from 35° to, when fire-heat is used, 45°; the temperature aimed at as most suitable being 42°, and regular. The following are the best :—

Eriostemon.—Nice bushy plants, growing in the style of a myrtle, and blooming profusely in April. Their bloom-buds never drop, and are pretty all winter. After blooming, cut them down to one-third of the last wood, as no buds will break where the blooms have come out. Do not pinch in any but the most rampant shoots during summer, as they make bloom-buds all the way up the season's growth. They should have plenty of sun in summer to ripen the wood.

Correas do not always hold their bloom well, and will drop all in too dry a house, or if allowed to go dry at the root. Some are not very handsome, but I have *C. Brilliant* now (December) in full bloom. The flowers of this are a fine bright crimson, acorn-shaped, and very pretty till they lengthen into tubes about an inch and a-half long, and as thick as a pencil. My plant is now covered with flowers and buds, and will remain so all winter. Pinch the ends of the shoots in after June till they stop growing in winter. They have a tendency to grow table-shaped, like an inverted cone.

Eutazia myrtifolia.—Very hardy, growing like a willow-stool, and should be pruned to within an inch of the old wood after blooming, which it does in April. The flowers are rather small, of a deep orange, pea-shaped, and the plant of a pretty light green. Requires well ripening in the sun, as the smoke makes it grow luxuriantly.

Chorozeina cordata I have raised from seed, and now, at three years old, they are howing bloom. *Ilicifolia*, *Chandlerii*, etc.,

are not quite so hardy. *Cordata* may be well exposed all summer, double potted; the others not so much, or kept in a sunny, dry house. Cut down after blooming to within an inch or two of the old wood, or *cordata* may be trained on a wire balloon, by those who like such curious contrivances. All must be well drained. An article on their culture was lately given in the *FLORAL WORLD*.

Camellia.—After the first or second year this tribe gets acclimatized to London smoke. Never buy these when in sour peat, because they cannot be meddled with at the root like most other plants. Avoid extremes of atmospheric dryness or heat, or they will drop all their blooms; some will fall from the plants, not being able to nourish all they make. Pick out the terminal wood buds every autumn, so as to make them grow bushy, as they will not bear severe cutting in unless they can go into moist heat. Not much is gained by exposing them in summer, at least near town; perhaps it is best to keep them in the shadiest part of the greenhouse till their growth is completed, and afterwards let them have a little sun, not too much. Large quantities of these are imported from Ghent: nice little plants, but in peat are difficult to manage; so in this article it is best to encourage native industry.

Azalea.—The stoutest growers of *Indica* are hardy and easy to manage, but have nothing to do with the slender, weakly-growing ones. Their leaves hold the dirt terribly, but as they get a new set every year, and drop the old ones, that is no great drawback. This tribe is "hair-rooted," and must be grown in all peat, well drained. Pruning or pinching here is seldom necessary, except on a rampant shoot. If they get leggy, turn them on their side in spring, or keep the stem moist by putting a little moss loosely about it, which will cause young shoots to break. In potting, never give a large shift; drain well, and keep the collar of the plant one half to an inch above the surface of the mould, so as to keep that always dry. The robust sorts may have two or three hours' sun a day when exposed in summer, but it must not be too hot, or they might be placed under thin tiffany. Never on any account let them go dry, it is death to them. I have not the names of any sorts to give, perhaps some reader can.

Sollya.—Not strictly a greenhouse plant, but very pretty and useful as a bush or for covering a wall or glass angle in a house, as, being hardy, it requires no matting in severe weather. They may be put in poor or rich soil, according as bloom or

growth is wanted, and may be propagated by seeds, cuttings, or layers. *S. heterophylla* is a larger grower, and rather lighter bloom, than *S. Drummondii*, which is a deep blue. In other respects they are precisely similar; bloom from March till December, and the bloom is succeeded by long seed-pods of a purplish colour, where exposed to the sun, which hang on till the next summer.

These would make excellent citizens. If useful, I will send you, Mr. Editor, a supply of seed this spring to distribute. They seldom require pruning, as the flexible hoots may be tied into shape. [Do so.]

Acacia.—There are a thousand varieties of these, but for near town such sorts as *rmata*, *longifolia*, and the simple leaved kinds, only are suitable. None can rival *rmata* in quantity and fragrance of bloom. Keep it well supplied with water in summer, and let it stand in the full sun, and that wreaths of gold will reward your pains in April. The pinnated-leaved ones, *s. grandis*, *dealbata*, are apt to lose the leaflets in winter, and with them their beauty. The growth of these is so various that the cultivator must use his discretion in the matter of pruning. The common *rmata* should be cut well in.

Metrosideros, or bottle-brush, should be runed into shape, to make a nice bush, instead of the straggling, helpless thing it is usual to see. It is better to lose the powers of this for a year or two, in order to it freely. The blooms come at the end of the shoots, and are little else than crimson stamens tipped with golden dust, very handsome. The plant is nearly hardy, and must be well exposed to the summer's sun. After blooming, the shoot continues to grow and flower alternately, and would, to the extent of some yards, if permitted.

Pimelea.—*Decussata* is the only one I have grown. It flowers in May, every shoot bearing a head of little pink blooms, like a miniature verbena, with orange stamens. The heads come out altogether, and the plant is completely covered, and lasts in full glory a month, if shaded. A great many come to Covent Garden. After blooming, they must be cut down to half an inch from the old wood, and kept dryish at the root, and the wood syringed occasionally, there is not the convenience of a close, moist house. After the new shoots are an inch long, a great part of the old mould may be taken from the ball, and a mixture of peat, loam, and a little very old dung substituted. Must be moderately exposed in summer.

Kennedya nigricans has dark purple, almost black, flowers, pea-shaped, coming

in spring. It is a climber, well suited for the rafters of a small house. The foliage is about four inches across, and it likes a sunny situation, if trained inside. Most of the others are stronger; also climbers with flowers like a scarlet runner; not that I mean any disparaging comparison, for I think the runner a handsome flower, and hope some one will raise a variety with a colour as bright as Tom Thumb's. *K. prostrata* is a rather tender little trailer. *Kennedya*, or *Hardenbergia monophylla*, and *ovata*, are small climbers, which should have a branch to run on. Their blooms are small, and dark purple in May. They should be kept back in spring, as the cold nights make them fall off before they are fully out. These two are a little tender, and should have the warmer end of the house. Damp sometimes lays hold of a *Cytisus* leafstalk and kills the shoot. Two-thirds peat and remainder leaf and light loam, and only moderate exposure in summer.

Cytisus.—An outline of their culture was given a year or two ago in the FLORAL WORLD. They are difficult to strike from cuttings, but seeds are plentiful, and seedlings bloom the third or fourth year, and as they will not bear pruning, it is as well to keep raising two or three plants a year from seed, and as the old ones get shabby, to cut them close in: if they break, well and good; if not, it is no loss. Some seedlings from their infancy show a tendency to make handsomer plants than the others; therefore, make your selection accordingly. Peat and loam, two-thirds of the latter to one-third peat will keep them compact, but to make them bloom quickly, at the risk of making them a bad shape, use a richer soil for the first two years. Expose freely.

Deutzia gracilis and *scabra* are deciduous bushes, six inches to a foot high and through, covered in spring, if they have had free exposure the previous summer, with bunches of little white flowers, very pretty; *gracilis* is the better of the two, and is half drooping in its habit. They will not want much pruning. Soil, sandy loam and peat.

Calla, or trumpet lily, will not bear the smoke out of doors well, so it is best to keep it in a corner of the house. If put out, may stand in water, but not more than two inches up the pot. Let only one or two plants be in a pot, and destroy all young ones as they come up, which will insure fine blooms and large leaves. The least frost kills the leaves.

Plumbago capensis is a fine old plant, which may be grown into a bush on a balcony, or trained against a wall in-doors, for which it is well adapted, as it makes

growth from the bottom, and never gets naked. The flowers are produced in August, at the ends of every shoot, and are of a pale blue. It does not require much pruning, but will bear any amount. Near London most of the leaves wither in winter, and must be pulled off, as they do not drop. Sandy peat and one-third loam is the best soil, but if wanted for covering a wall quickly, it may be a little richer. The plant should be well exposed after June to insure plenty of bloom at the end of summer. The enterprising amateur, not well up in entomology, will often suspect some old lady of the last century has been trying the contour and keenness of those long finger-nails on the leaves of this plant. It is, however, the saw-fly and wild bee that have a partiality for this plant over most others, and if not caught while at work, soon disfigure it.

Cassia corymbosa is such a straggler, and so sparing of its blooms, that I prefer *C. floribunda*, which flowers in quite a dwarf state at six inches high. The foliage is pinnated, and at night not only falls downwards, but turns the under side outwards. The blooms are yellow, and produced rather too late in autumn for those who cannot give it a little heat, but it must be got into flower earlier by exposing to the hottest sun, and stinting the supply of water. It generally sheds all its leaves in winter, and may be cut close down.

Indigofera decora.—A deciduous shrub, producing delightful rosy-blush clusters of bloom in July and August. It likes a rather richer soil. The plant is in appearance a very refined gentleman, the quintessence of elegance, the foliage being very pretty, and of a delightful green. It may be pruned like a fuchsia.

Hovea is a tribe without much beauty, their style of growth being formal and ugly. *H. Cellsii* and *purpurea* are hardy and easily managed. They require pruning well in after blooming in spring.

Dolichos lignosus is a climber of moderate height. It is easily raised from seed, and grows rapidly, and blooms pretty freely in four or five years' time. The flowers are much like, in colour and shape, the everlasting pea. The foliage is light and elegant. It must be cut in well every year in spring till it flowers, and through the growing season must be watched and trained to one or two leaders, or it will run into a profusion of useless spray.

Hicertia volubilis may be trained as a bush, or used as a climber to ten feet. It is not very handsome, but is hardy. The blooms are yellow, in form something like *Escholtzia*, but not so dark. It is easy

to keep furnished with foliage on the lower stems, which is not the case with every climber. *H. grossulariaefolia* is a good plant for baskets.

The passion-flowers are the best greenhouse climbers, but, unfortunately, few do well in a cool house. The common *cœrulea* is too rampant. *Cœrulea racemosa* will succeed pretty well at the end warmest in summer and winter. It should have plenty of room if in a pot, and it might be allowed to root through to the ground. It likes a rich soil, and must be well cut in to the main stems, and the laterals picked out to throw the strength into a few shoots, because, when grown without much heat, laterals shoot from every joint. It will shed most of its leaves in winter, and should be pruned in March.

Cactus.—The common flat and three-angled leaved are easily managed. After blooming, they should have what repotting is necessary, and all the smaller shoots cut out, and only a few of the larger stems left. A supply of young stems should be encouraged from the collar and those which come from the tops of the already tall stems rubbed off, so as to make a thick-set plant that will not tumble over with its own weight. They should be set out all summer in the hottest and sunniest spot, against a brick wall is a good place, and liberally supplied with water, and a little weak manure water occasionally, and housed in September, and no more water given till the following March or April, when a trifling syringing overhead may be given as a commencement. *C. truncatus*, which is sold so plentifully about town, in bloom, in the early part of winter, is too tender. There is a splendid large rose-coloured, of which I do not recollect the name. Its growth is similar to the common, but I do not know if it is as hardy.

Hoya carnosa, though properly a warm greenhouse plant, will live, and, perhaps, in a warm summer, give some flowers. Its fat, heavy wreaths of leaves require support. A good place for it would be the topmost part of the roof, where it is usually hot, and where it could have plenty of sun, and if neglected for a week or two, will not suffer from want of water, of which it requires but a moderate supply in summer, and none from September to March, being a succulent. In such a position it could dangle over the pot, and look much more natural than when trained upwards. It seldom wants any pruning, except to rid it of worn-out branches. Liberal drainage, assisted with porous brick mixed with a rather rich soil, suit it.

Abutilon.—Mr. Glennly in *Lloyd's*

papers, speaks of this as being a fine plant for bedding out in summer, when it forms a large bush. The foliage is, when liberally grown, handsome, the flower orange with dark veins, coming late in summer. I have grown only a venosum.

Erythrina.—Bulbous stems of these may be bought at the shops. *Crista galli* and *aurifolia* are alike, excepting the former is a brighter colour. They are known as lobster-claw and Coral-plant. They do best turned out at the middle of June, and may be bedded, and the bulbs taken up early in autumn before the least frost. If grown in a house, they run up without much bloom. Being gross feeders, they like a rich soil. They are handsome plants, as all who have seen the specimen at Kew will admit. *E. Caffra* is rather too tender for a cool house.

Coronilla glauca, a plant much like *Cyissus*, but without its perfume. It is almost hardy, but even in a greenhouse near town will lose some of its old foliage in winter. Plenty of cutting in after blooming, exposure all summer and autumn, and a loamy soil, suit it. It takes some time before lowering if raised from seed, but cuttings root easily enough.

Eugenia ugni, a kind of myrtle, made a great noise some time ago as a new fruit. It is scarcely worth room, and a penny would buy more strawberries than it would produce in a year; nor is the fruit handsome, being like a miniature medlar.

Mandevilla suaveolens is almost too tender to bloom in a cool house; it will grow, however, healthily, and may some years bloom. My plant is small, and does not appear to be suited for covering a large or very high space. I believe it is best trained on one main stem, and spurred back early in spring.

Tucsonia mollissima.—Similar to a passion flower, requires the same treatment.

Aphelexis are gawky Cape plants, making long tails of shoots covered with leaves like pointed scales, and the flower coming at the ends in spring and lasting all summer, being everlasting. They must have frequent stoppings to make them bushy, and breaks from the collar encouraged. They never look well till they get to some size. Pure sandy peat, liberal drainage, sun and fresh air, suit them, but being rather tender for near town, they had better be kept in the house the year round. The best are *A. macrautha purpurea*, *A. humilis*, and *A. purpurea*; British ferns, *Pteris serrulata*, *Lycopodium denticulatum* are useful for the shady places in a house which want filling up, and are easily grown. The *Lycopodium* is best grown in pans, and planted fresh every autumn in September, otherwise it usually mildews off and gets shabby if too thick in winter. The *oxalis*, such as *Dieppii*, *Bowii*, *floribunda*, are pretty, and flower freely, but many of the hundred other sorts do not.

The following is a list of losses principally from the plants being unsuited for smoke, and the temperature of my house in winter:—*Chironia frutescens*, *Hibbertia Cunninghamii*, *Crowea saligna*, *Coleonema rubra*, *Acacius grandis*, *verticellata*, *dealbata*, and *Drummondii*, *Beaufortia purpurea*, *Kennedya prostrata*, *Polygala oppositifolia*. It is worth observing that most of my losses are of small fine-leaved plants. The *ericas* I never ventured on, but I think there are some few hardy enough, and should be glad of the names of a half-dozen [*Bowieana*, *flammea*, *refulgeus*, *Willmoreana*, *hyemalis*, *Linneana*].

The *Skimmia Japonica* is very ornamental, and would make an excellent winter bedding plant, being loaded with its coral berries.

J. R.

NOTES FOR THE GARDEN.

KITCHEN GARDEN.—Make new plantations of artichokes, rhubarb, horseradish, and chives. Plant main crops of potatoes. Pot a few roots of mint, and put in heat for salads and sauces. Continue to force rhubarb, seakale, and asparagus. Get cucumber and melon plants forward. Top-dress asparagus and seakale beds.

Sow main crops of peas, broad beans, savoy, carrots, onions, cardoons, and spinach. Sow also small patches of cabbage, lettuce, radish, cauliflower, turnip, broccoli, leek, and parsley; and in gentle heat, celery, lettuce, and cauliflower.

FRUIT GARDEN.—Cuttings of bush fruits may still be put in. Grafting should not be delayed, as the sap is now rising. Pruning and cleaning ought to have been completed long ago. If not

so, let your motto be, "better late than never." Burn all the prunings and clippings of trees, hedges, etc., and use the ashes as a top-dressing for quarters of bush fruits.

FLOWER GARDEN.—Sow hardy annuals in the borders, and a pinch of each in pans and pots. Strike *chrysanthemums* in heat for planting out in May. Get dahlias to work, and take cuttings. Give plenty of air to auriculas, pansies, carnations, etc., and water freely during bright weather. Give weak liquid manure once a week. A mixture of guano and wood ashes is a good dressing for beds of roses that have not been mulched. Lay it on two inches thick. Plant *Dielytra spectabilis* from pots in rich deep loam.

GREENHOUSE AND STOVE.—Plants in bloom must be kept cool to prolong their beauty.

Give liquid manure, clear and weak, to all plants swelling their bloom-buds. Get fuchsias into growth by a gentle bottom-heat, and take cuttings for summer and autumn flowering. Start gesneras, gloxinias, and achimines, if not done already. Continue to propagate bedding stock, and use a brisk heat to every thing intended to be propagated. Pines swelling their fruit should

have plenty of manure water, and a bottom-heat of 85° or 90°. Vines and peaches in bloom must not be syringed. Thin the bunches of vines that have set fruit, and use the syringe freely. Sow tender annuals and place over a propagating tank, or otherwise start in a moderate heat. Greenhouse, 50° night, 60° to 65° day.

MARCH, 1862.

PHASES OF THE MOON.—First Quarter, 8th, 5h. 21m. even.; Full; 16th, 5h. 16m. even.; Last Quarter, 22nd, 9h. 49m. even.; New, 30th, 7h. 45m. morn.

31 Days.				Weather near London, 1861.				THE COUNTRY.		
M	W	Sun	Sun	BAROMETER.		THERMOMETER.			Rural Sights and Sounds.	
D	D	rises	sets	Mx.	Min.	Mx.	Mn.	Me.		
		h.m.	h.m.							
1	S	6 47	5 38	29.690...	29.532	53...	34...	43.2	.19	Wryneck appears
2	Su	6 45	5 40	29.927...	29.619	52...	40...	46.0	.04	Bees begin to move [married]"
3	M	6 43	5 42	29.850...	29.540	53...	35...	44.0	.01	"Pale primroses, that die un-
4	Tu	6 41	5 43	30.184...	29.000	49...	28...	38.5	.00	Yellowhammer sings
5	W	6 38	5 45	30.225...	30.003	51...	40...	45.5	.00	Wren sings
6	Th	6 36	5 47	29.901...	29.606	55...	37...	46.0	.05	Titmouse sings
7	F	6 34	5 48	30.094...	29.976	54...	41...	47.5	.00	Frogs active on sunny days
8	S	6 32	5 50	30.069...	29.978	59...	29...	44.0	.00	Chrysalis of Capricorn beetle
9	Su	6 30	5 52	30.372...	30.252	50...	39...	41.0	.00	Almond flowers
10	M	6 27	5 54	29.970...	29.701	56...	32...	44.0	.10	Apricot flowers
11	Tu	6 25	5 55	29.311...	29.270	49...	37...	43.0	.14	Peach flowers
12	W	6 23	5 57	29.391...	29.314	49...	33...	41.0	.08	Golden saxifrage flowers
13	Th	6 20	5 59	30.100...	29.649	51...	21...	36.0	.00	Germander speedwell flowers
14	F	6 18	6 1	30.233...	30.114	55...	40...	47.5	.02	Corchorus japonicus flowers
15	S	6 16	6 2	30.088...	29.035	55...	24...	39.5	.00	Crocuses in full beauty
16	Su	6 14	6 4	29.978...	29.853	49...	29...	39.0	.11	Winter green flowers
17	M	6 11	6 6	29.890...	29.338	47...	30...	38.5	.37	Stone curlew on uplands
18	Tu	6 9	6 7	29.906...	29.249	49...	35...	42.0	.04	Anemones flower
19	W	6 7	6 9	29.307...	28.936	51...	32...	41.5	.08	Willow flowers
20	Th	6 5	6 11	29.616...	29.346	48...	33...	40.5	.20	Oak flowers
21	F	6 2	6 12	29.796...	29.387	47...	30...	38.5	.01	Poplar flowers [quarters
22	S	6 0	6 14	29.725...	29.595	55...	32...	43.5	.00	Snakes leave their winter
23	Su	5 58	6 16	29.837...	29.774	61...	28...	44.5	.00	Arum maculatum flowers
24	M	5 55	6 17	29.808...	29.689	64...	38...	51.0	.13	Daffodil and narcissi flowers
25	Tu	5 53	6 19	29.904...	29.760	48...	42...	45.0	.00	Jonquils flower
26	W	5 51	6 21	29.675...	29.518	57...	39...	48.0	.01	Turtle and crane build
27	Th	5 49	6 23	29.457...	29.384	59...	43...	51.0	.17	Laburnum and lilac leaf
28	F	5 46	6 24	29.522...	29.416	60...	30...	45.0	.01	Winter midge appears
29	S	5 44	6 26	29.713...	29.648	57...	34...	45.5	.02	Wild strawberry flowers
30	Su	5 42	6 27	29.608...	29.564	55...	36...	45.5	.13	Stork's-bill & dove's-foot flws.
31	M	5 39	6 29	29.665...	29.535	55...	27...	41.0	.01	The valleys filled with music

TO CORRESPONDENTS.

SIX QUEERIES.—S. P. P., Moreton.—When grass will not grow for want of light, spergula is no use. Nothing better for the bank than periwinkle, of which there are several varieties, the minor white will make the best bank. Moneywort is a first-rate thing to cover a bank, the plants to be inserted on the upper edge, whence they will soon trail to the bottom. Violets would not flower well there. Primroses would do, but they look poor in the autumn. The spergula ought to grow famously on the lawn with such good treatment. The campanula may be had now of the raiser. It will make a first-rate exhibition plant. The "Gar-

den Oracle" will suit you well. There is a sheet almanac, published by Lawson and Sons, if you want one to hang up. Tan is bad-stuff to grow plants in; when worn out use it to plunge in, and if you want to get rid of it, burn it with garden rubbish to increase the bulk of wood-ashes. Nothing so good as gas heat for Waltonian, next to that the oil-lamp; Palmer's candles cost at full speed 1s. 9d. per week. We cannot recommend any house in particular for plants. ASPHALT WALKS.—G. F. Mallow.—We take the following from "Jones's Gardener's Receipt Book":—"The place intended to be

asphalted must be previously levelled, then put on it a coat of tar, and sift some road-sand or coal-ashes all over it very thickly; after this is dry repeat the operation until you have got four coats of tar, and as many of coal-ashes or road-sand. You will then have an excellent, clean, dry, hard path. It will make excellent walks or floors for sheds, out-buildings, etc., and will wear for many years." In the same work are three other recipes.

MIDLAND AND NORTHERN ROSE SHOW.—In our last number we announced that the Rev. S. R. Hole was engaged in organizing a Rose Show for the Midland and Northern growers. We hear that the scheme progresses favourably. We hope that every rose grower in the districts which are to be combined in this undertaking, will contribute to the prize fund according to his means, and we can the more heartily commend the matter to the favourable attention of Midland and Northern rose growers from our recollection of Mr. Hole's courteous and conciliatory management of the National Shows at Hanover Square Rooms, St. James's Hall, and Crystal Palace, which were severally great successes, and properly led the way to the institution of a Rose Show by the Horticultural Society.

LENTAUREA CANDIDISSIMA.—*Purchaser.*—This generally puts up a number of suckers and small shoots from the bottom of the plant, which readily strike in sand under a bell glass; if your plant is not furnished with these, encourage it to make side-shoots by nipping the top out, and set in as warm a place as you can, and you will soon have a crop of cuttings that will make nice plants by bedding-out time. Plants from seed come true with very slight variation, but the normal type will be more uniformly preserved by means of cuttings.

BOOKS AND CATALOGUES RECEIVED.—"Hooper and Co.'s Spring Catalogue of Flower, Shrub, Tree, and Vegetable Seeds (Hooper, Covent Garden)," is a good alphabetical and botanical arrangement of every requisite of the season. It contains lists also of ornamental gourds and grasses.—"Barr and Sugden's Guide to the Flower Garden, 1862." A compact 8vo, of 116 pages, the subjects grouped judiciously, described accurately, and the several sections accompanied with cultural notes of the highest practical value. It is, moreover, illustrated with some beautiful figures, and with a map of London for visitors during the season of the Exhibition. It is the neatest trade production we have yet had to notice this year.—"Henderson and Sons' Catalogue of Flower Seeds, for 1862," is in the usual form, very copious and interesting. There is a good paper on gourds, and some useful recipes, but it is not distinguished this season either by woodcuts or any formidable list of novelties.—"The British Workman," if we are to judge by the number sent, is without a parallel for beauty of illustration and judicious selection of matter, of all the cheap broadsheets hitherto published. The medallion of Prince Albert is exquisitely engraved, and worth at least half-a-crown. The "British Workman" is a wonderful pennyworth.—"The Children's Friend."—An attractive sheet, abundantly illustrated with really beautiful engravings, and the literary matter not only appropriate, but far superior to the average of such works.

AMELIAS GROWING TOO LARGE.—**HYACINTHS OUT OF BLOOM.**—*S. W. C.*—We know of no other way of "keeping camellias of a proper size for the parlour window" but the simple one of cutting them back. This should be done just before they are out of bloom, so as to induce a new bushy growth from the lower

parts of the branches to which they are cut back. If you wait till they are quite out of bloom, some of the topshoots will be started; so cut them to shape and size, but not too severely, when the best of the first blooms are over. We should prefer to exchange them, if possible, for plants of a suitable size. Camellias should always be housed in September, or the first week of October, and those wanted for early bloom should go to an intermediate house at the end of October, and to the cool end of the stove about three weeks afterwards. The winter rose is *Helleborus niger*; it will grow in any good garden soil, is quite hardy, likes a shady place, and when grown in pots should have plenty of root room, and be kept in a pit or cool greenhouse. Hyacinths require liberal culture after the bloom is over; plenty of water, the pots plunged in ashes in the open air, or the balls turned out into rich sandy soil without injury to the roots, and the plants encouraged to grow by mulching the surface of the soil with half rotten dung, and giving abundance of water in dry weather. As soon as the leaves begin to fade cease to water them, and when the leaves are quite withered lift the bulbs, and lay them on their sides with a couple of inches of earth over them to ripen.

CARDINAL FLOWER.—*Amateur.*—*Lobelia cardinalis*, a magnificent bill hardy herbaceous plant, may be raised from seed sown in pots or open border in June. Plants to be potted in September, and kept in fire or greenhouse all winter, to be turned out the next season for flowering. Any of the seedmen who advertise in this work, can supply you with either plants or seeds.

FUCHSIAS NOT BLOOMING.—*M. M. S.*—If you read the papers on Fuchsia culture which appeared in last year's volume, you will obtain all the information you require. Fuchsias refuse to open when the pots are badly drained, when the soil is too poor, when they suffer from drought, or when the roots get burnt by too much exposure to the sun, or when the temperature is too low for them. The last cause is of the least consequence. We had a house facing the north-west, which the sun does not see from November to March, full of fuchsias all winter, and they were in full bloom till after Christmas without any aid from artificial heat. It was a charming sight to see them, and it was a good test of the hardiness of fuchsias when well treated all the summer; these were the potted plants of the varieties reported on last year; they stood out beside the bedded ones till far into October.

SAGINA PROCUMBENS.—*G. P.*—This is such a plentiful weed that it would probably not pay any one to grow it for sale. True, if large quantities were required, it would be a great convenience to have it in turves from a nursery, but no one has yet taken it up, simply because there has been no demand. *Spergula saginoides* is a very rapid grower, and forms a rich, close, substantial turf. It is also much prettier than grass to clothe banks; it is astonishing how the *spergulas* love slopes and rockeries, where there is plenty of soil and a rapid draining away of superfluous moisture. *Festuca ovina* and *Festuca glauca* may be had in any quantity of the leading seedsmen. We should advise you to get a few tufts of the latter, and increase it by division in preference to sowing seed. They have it at all the nurseries.

VINE BLEEDING.—*T. S., Clonmel.*—When the vine gets into growth the bleeding will cease, and the vine will certainly be all the worse for it. But you can do nothing now to check it. The remedy now generally used is that recommended in Jones's "Gardener's Receipt Book":

one-fourth calcined oyster shells beaten to a fine powder in a mortar, and three-fourths of cheese, worked together until they form a paste. The mixture is to be forced into the pores of the wood, where the bleeding takes place, by means of the thumb and finger. Next season prune earlier.

HEATING PROPAGATING CASES.—*K. Z.* has very uncourtously and inaccurately noticed the few remarks I made upon this subject. I did not propose floating lights as substitutes for his lamp, nor as suitable in all cases. I stated that in some instances they had been found to fulfil the desired object, and I have yet to learn that anything is to be condemned on account of its simplicity. "*K. Z.*'s" comparison of them with night lights proves that he is practically unacquainted with them, as they yield four times the heat, at one-third the expense. Neither did my observation justify "*K. Z.*" in his remark, that I seem to think the weight and measure of oil is a proof of its quality. These points were only introduced to put your readers on their guard against being defrauded by short measure. This, the chief object I had in view, would have been equally as well attained without the insertion of the tradesman's name and address as with. But judging that the majority of your readers had experienced the same difficulty as I myself had done, in procuring good oil, I thought it would increase the value of my communication to add them to it. But I also added, at the same time, "that I had given the name and address of the tradesman referred to, but that I wished to leave it entirely to your discretion whether it was desirable to insert them or not." This I think is sufficient reply to "*K. Z.*'s" uncalled for imputation of my motives in addressing that communication to you. Daily experience convinces me more firmly than ever, that the wisest and most economical plan is to use that method of heating which is found to be best adapted for each particular case. Every one knows the difficulty of having any such article as a lamp made exactly as required, and I thought it a pity that any of your readers should go to the expense of having one constructed, which, after all, might not answer. Therefore, I desired to point out that there were many various methods by which it might be attained, and I noticed floating lights as an instance. You yourself use Palmer's lamps and candles, and no doubt they answer very well, but compared with oil, I think you must find them very expensive. Oil, I believe, to be the best, safest, and cheapest mode of heating propagating cases. In conclusion, I wish to observe, that had "*K. Z.*'s" remarks been couched in a less sarcastic and fault-finding spirit, I should not have replied to them. He evidently appears to think his own plan so perfect, that he will not allow any one else to propose any substitute for it. I do not think correspondents should have those opinions, and not having them myself, I do not propose to follow "*K. Z.*'s" example by criticising his communication, for which, were I so disposed, there is ample grounds.—*K. Z.* No. 2.

[We are very much indebted to both parties for the information they have afforded to our readers. What a pity the disputants are not of the tender sex, then we could bid them kiss and make it up. There is really nothing to quarrel about, it is merely a case of misunderstanding on both sides, and there need not be a breeze about it. Now each has had his say, let us hope the contention will end without shedding of either oil or blood.]

MICE AND SLUG TRAPS.—Just before Christmas I was in Somersetshire, and I found the gar-

deners had set the usual traps of a jar half full of water, with grease over it, sunk in the ground for the mice; and upon examining some of them I found the jars a quarter full of slugs. Is it the grease or water that attracts the slugs? Yours.—*A. B. S., Torquay.* [Slugs are fond of grease, and one of the most effectual traps for them is a buttered cabbage-leaf. It was for the grease, no doubt, they entered these jars, from which they would easily escape, for they swim with grace and dexterity.]

TROPEOLUM TRICOLOR.—*T. Sheely.*—From your account of your *tropaeolum*, it appears as if it had not been shaken out of the old soil in which it grew and flowered last year, but is still surrounded by hard, dry material impervious to water, and into which it cannot protrude its roots. If such is the case, shake every particle of soil off the bulb, and repot in a free soil consisting of equal parts of peat, loam, and leaf-mould, or well decomposed manure; or it will succeed well in a mixture of equal parts turfy loam and well-rotted manure, a little silver-sand; with either compost, use plenty of drainage, and set in the greenhouse, water when necessary, and there is no doubt your plant will progress satisfactorily. If these directions had been attended to the latter end of last August, or beginning of September, the plant would by this time have made several feet of vigorous growth. Don't by any means attempt to excite into growth by a greater warmth than that of the common greenhouse. *Caladiums* should be shaken out of the old soil as soon as they manifest signs of growth, repotted in good loam and leaf-mould, or rotten manure; if possible, plunged in bottom-heat, watered sparingly at first, and they will immediately start into vigorous growth.

VARIOUS.—*Sabba.*—In Loudon's "Encyclopedia of Gardening" you will find notices of the French style at various dates, and references to authorities upon the examples.—*Subscriber.*—The cinerarias have been attacked by some insect pest which probably lurks about the wood-work. In all such cases an occasional examination of the plant should be made by candlelight, when most of these depredators are banqueting. Perhaps in some of the chinks between walls and wood-work, there are harbours for woodlice, which may be made an end of by means of boiling water.—*Floral World.*—You do not need a heat of 80° or 90°. It is said that the *Waltonian* may be raised to such a temperature simply to show what are its capabilities. Perhaps you keep the sand too wet, and give too much air. Try emptying the boiler morning and night, and refilling each time with boiling water.—*J. E., Tipperary.*—*Camelias* can be so packed as to travel from Portugal safely to Ireland. They should be taken out of the pots and the roots packed securely in sphagnum, and dry straw used to pack the branches. The less damp there is about them the better. When they arrive and are unpacked, lay them out on the floor of a shed, and syringe them all over and leave them in the damp twenty-four hours, then pot them and shut them up rather close in a warm house. If you can give them bottom-heat it will be to their advantage. Tuberoses are sure to bloom if the bulbs are good. *Oleanders* require a brisk heat and abundance of moisture to bloom well. *Tritomas* do well in the open air in a rich sandy loam, and to be taken up and kept in pots all winter.—*Motto 768.*—Your fern may be *Lastrea filix-mas*, *Lastrea spinulosa*, or *Lastrea dilatata*. We frequently have to say that we cannot name ferns by means of scraps an inch long on which there is no fructification. Send a fair specimen in fruit, and you shall have the name.

THE
FLORAL WORLD
 AND
GARDEN GUIDE.

APRIL, 1862.



YACINTHS have been exhibited this year in greater numbers and in a higher state of perfection than for many years past. On the 17th, the nursery shows of Messrs. Cutbush at Highgate and Mr. Paul at Waltham Cross commenced. On the 19th, the Royal Horticultural Society patronized hyacinths and camellias; and on the 26th, Messrs. Henderson, of Pine Apple Place, Edgeware Road, commenced exhibiting a truly splendid collection of unforced hyacinths.

The show at Kensington was eminently successful; there was an immense company, and a superb collection of spring flowers and ornamental plants. In the hyacinth competition the first prize was taken by Messrs. Cutbush, of Highgate, the second by Mr. Paul, of Waltham Cross, and the third by Mr. Grimby, of Albion Nursery, Stoke Newington. The prize offered to amateurs by Mr. Cutbush for the best twelve hyacinths was awarded to Mr. Young, gardener to R. Barclay, Esq., Highgate. Messrs. Henderson, of Pine Apple Place, exhibited hyacinths in miniature jardinets of glass and china. Messrs. Cutbush and Mr. Paul were the leading exhibitors of tulips; Mr. Standish and Mr. Salter of camellias. The Rev. F. Beadon, of North Stoneham, sent boxes of cut flowers of camellias grown in the open air. Messrs. Veitch, Williams, Bull, Frazer, Low, and Henderson were the principal exhibitors of stove and greenhouse plants.

NEW HYACINTHS.—Instead of appropriating many pages to detailed reports, we will here gather together the results of the several exhibitions, so far as we believe them to be interesting to our readers. The best six new hyacinths were those shown by Messrs. Cutbush, at Kensington; namely, *Reine des Jacinthes*, a great advance on Lina, colour deep rosy carmine, large and finely-formed bells, a bold spike, most effective, and richly coloured. *Pollissier*, one shade darker in colour than the last, otherwise of the same massive character. *Duc de Malakoff*, flesh with rose stripe, described in the catalogues as orange and carmine, the bells and spike truly fine, and the flower a real advance on the class of inter-

mediate colours. *Paix de l'Europe*, pure white, very large bells, compact spikes. *Sir Bulwer Lytton*, a magnificent double semi-white or cream. *Lord Macaulay*, deep carmine, light margin. These are not merely new, they are a real advance in every essential property, and they mark most satisfactorily the direction in which the breeders of hyacinths are making progress. Other new and newish varieties of very high merit are the following:—*Victoria Alexandrina*, deep lake-red, large bells, very smooth, and the spike forming a very regular pyramid. *Koh-i-Noor*, a semi-double red, described as salmon; the colour is in reality a vivid rosy-carmine, shading to rosy-flesh; and when at its best, there is not a hyacinth in cultivation to equal it for vivid colouring. But it has the fault of retaining a green tint on the tips of the segments of the bells, unless very skilfully managed in the forcing-pit. Messrs. Cutbush and Mr. Paul have a number of this rare variety in bloom now, and the price at present is a guinea a bulb. *Snowball*, the finest-shaped of all single hyacinths, the face of the bell circular, the segments of great breadth and of nearly equal size, colour purest white. *Aurora*, classed as a single yellow, the tube is pale straw splashed with rose, the face of the flower deep flesh ground with rich carmine stripes, very striking, but in no sense whatever a yellow. *Solfaterre*, fiery orange-scarlet, appropriately named. *Howard*, a shade less vivid in the same style of colouring, and more full in habit. *Aurora rutilans*, dark red face. *Florence Nightingale*, pale pink with carmine stripes, large bells, spike crowded, most cheerful and effective. *Milton*, one of the most useful novelties, deep-shaded crimson, immense spike. *Princess Charlotte*, delicate rosy-pink, every way first-rate, except that, like *Koh-i-Noor*, it is apt to keep at the points a few touches of green. *Lord Clyde*, one of the wonders of the season as regards colour, a peculiar bronzy lilac, small thin bells. *Prince of Wales*, true mauve, with deep mauve stripe, large bells, huge spike, finely proportioned. *Haydn*, lilac-mauve, bells thin but elegantly formed, spike large. *Cleopatraz*, deep blush; we shall have to wait another season ere we can give an opinion of the merits of this. *Miss Burdett Coutts*, the grandest single bells yet produced; there is no hyacinth to equal it in that respect, but the spike is thin, colour creamy blush, waxy substance. *Blackbird*, deep glossy black, bells small, spike compact. *General Havelock*, classed as a black, but in reality a very deep purple, the spike is immense, and the bells large and well formed; there is no hyacinth to beat this, and it has already come down to 7s. 6d. a bulb, for the great comfort of the floral community. *Ida*, a great advance in the class of yellows. *Noble par Merite*, blush rose, moderately good, but does not strike us as of first-class merit; it is catalogued by Mr. Paul at 15s., and by Messrs. Cutbush at 9d.!! The foregoing range in price from 7s. 6d. to £1 1s., and a few are not accessible at any price. The following are selected from all the exhibitions of the month, as the best, and obtainable at from 9d. to 2s. 6d. each:—

OLDER HYACINTHS.—*Double Red*: Duke of Wellington, pale rose; Regina Victoria, pale rose; Susannah Maria, salmon rose. *Single Red*: It is in this class the greatest advance has been made, and many of the finest of recently-introduced varieties are now obtainable at prices varying from 1s. to 5s.—Amy, bright crimson; Cosmos, rosy pink; L'Etincellante, vivid crimson; Duchess of Richmond, rich pink; Gigantea, blush, almost white, a superb spike; La Dame du Lac, pale rosy pink; Lina, bright crimson;

Lord Wellington, rose and carmine; Madame Hodgson, pale pink; Lady Sale, deep red, suffused with purple; Monsieur Feasch, pale pink, changing to almost scarlet; Norma, waxy pink; Mrs. Beecher Stowe, rosy pink, fine; Queen Victoria, pink, with red stripes; Robert Steiger, bright crimson; Von Schiller, deep salmon pink.

Double White: La Tour d'Auvergne; Ne Plus Ultra; Prince of Waterloo; Sceptre d'Or, yellowish centre.

Single White: Alba Maxima; Grand Vainqueur; Grandeur à Merveille, pale blush; Grand Vedette; Madame van der Hoop, pure white, immense bells and spike; Mont Blanc; Orondates; Seraphine, pale blush; Victoria Regina; Tubiflora, tube stained with mauve, of flower blush white.

Double Blue: Blocksberg, marbled porcelain; Garrick, rich blue; Laurens Koster, violet blue; Sir Colin Campbell, light shaded blue; Prince of Saxe-Weimar, dark blue, long spike; Van Speyk, the finest double blue out.

Single Blue: Argus, bright blue, with pale eye, very striking and beautiful; Baron von Tuyll, dark blue; Charles Dickens, grayish blue, very fine; Couronne de Celle, azure, close spike; Grand Lilas, lovely porcelain; Mimosa, dark, extra fine; Orondates, porcelain; Regulus, light blue; William I., purplish, inclining to black.

Double Black: Othello, semi-double, very dark maroon purple, large bells, small spike, curious and interesting.

Single Black: La Nuit, purplish black; Montrose, jet black; Prince Albert, black shaded purple, very fine; Uncle Tom, rich shining black.

Single Mauve: Dandy, bronzy lilac, good bells; L'Unique, purplish mauve, very pretty.

Double Yellow: there are no pure high-coloured yellow hyacinths, but the best of the yellow class are of great value to assist other colours by contrast, and a few are really good shades of straw and amber. Bouquet d'Orange, dull orange yellow, good bells; Jaunie Supreme, yellow cream; Pyramide Jaune, pale yellow, small bells; Ophir d'Or, deep straw yellow.

Single Yellow: Anna Carolina, primrose; Alida Jacoba, canary with pale yellow eye; Heroine, pale clear yellow, very good; Overwinnar, pale straw, fine for contrast in grouping; William III., indescribable; has some yellow in it, and a decided pink stripe; Victor Hugo, a good pale yellow. The best yellow is Ida, described among the novelties, the present price per bulb being half a guinea.

We believe the above selections can scarcely be improved, but as the hyacinths at the nurseries will be good for some little time, our readers can compare our notes with the flowers themselves.

ROSES.—At Mr. W. Paul's Nursery, Waltham Cross, a house full of new roses is now in full bloom. There is also a house full of forced roses, mostly teas and noisettes, with a few hybrid perpetuals, which it will repay any lover of roses to visit. The camellias, hyacinths, and miscellaneous ornamental plants are grouped on the stages of the show-house with great taste, and a few hours may be passed most agreeably. The new hybrid perpetual rose Beauty of Waltham is in full bloom, and justifies the description of it as a first class high-coloured rose. It has a most beautiful foliage, and the rich rosy crimson of the blossoms is quite peculiar and distinct. The stock of hollyhocks, pelargoniums, and bedding plants is large and varied, and in the quarters there is a fine collection of roses, conifers, fruit-trees, etc., etc. A fine collection of the most

interesting varieties of garden shrubs is arranged on the two sides of a magnificent grass walk extending right through the nursery.

TULIPS.—The best early tulips at Mr. Paul's Nursery, Kensington, are Canary Bird, fine pure yellow, occasionally slightly streaked with pink; Porcupine, rich Magenta; Archduke of Austria, red and yellow, very striking; Rose luisante, pale rose and white; Van der Neer, violet purple; Cuyp, deep rose and white. The six varieties exhibited at Kensington by Messrs. Cutbush were Bruid van Haarlem, white and red striped; Canary Bird; Scarlet Duc van Tholl; White Pottebakker; Royal Standard, white and crimson striped; Vermilion, brilliant glowing scarlet. Royal Standard and Bruid van Haarlem are very much alike.

CAMELIAS.—Mr. Standish had a splendid collection at the Kensington show, among them Sarah Frost, a compact red striped with white; Duchess de Berri, white, finely formed, and a rich deep green foliage. Visitors to Mr. Paul's exhibition are advised to inspect the beautiful unnamed variety on the stage in the camellia house; it is an exquisite blush with occasional blotches and stripes of rosy carmine, evidently a camellia of the highest merit. Messrs. Milne, of Wandsworth Nursery, Vauxhall Road, invite the public to visit their splendid collection, which is now in full bloom. We must defer our notes upon it till next month.

MULTUM IN PARVO.

THE correspondence department of the **FLORAL WORLD** tells more surely than any other testimony could, how thoroughly it enjoys the confidence of its readers, and how those readers increase in number from month to month. The mass of letters is now such that to dispose of them in the courteous and communicative spirit in which we have always attended to the requests of our friends, requires a slight departure from ordinary routine, and the object of this paper is to furnish replies to a great heap of letters which contain queries on subjects generally interesting, and of such a kind that short replies in small type would be unsatisfactory to all parties. Instead, therefore, of treating on some subjects I had in my mind, and which will keep very well, I will make no more preface, but gather together the subjects presented by certain of these letters, and reply in such a way that every one of our readers will be pretty sure to obtain information on the subjects in which they are severally interested.

HOLLYHOCKS.

Is it too late to plant them, and what are the kinds Mr. Hibberd grows? It is the best time to plant them, especially if young plants are obtained from the nurseries. Mine will not be planted till after this is in the hands of readers. About one half of my plants are old stools in large

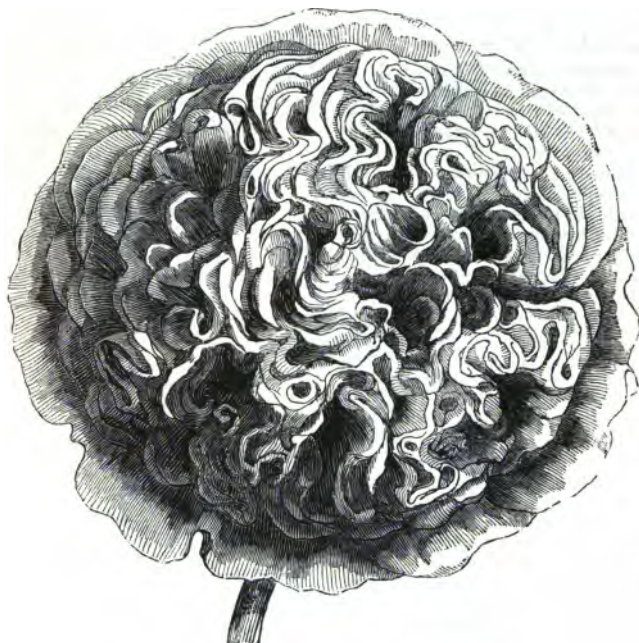
pots: the other half young plants struck in autumn, and at the end of February shifted from smallest to largest sixty-sized pots. I grow none but the very best. I cannot tolerate hollyhocks with broad guards, open pockets, loose spikes, or flimsy substance. Here are engravings of two of my favourites to give an idea of the fine form and compact character of the best of the named hollyhocks. My collection is not a large one; it consists of a few selected varieties, which are planted on a piece of deep loamy soil in a very open position, and some seedlings, and named varieties on trial, which are grown away from home, and of which a considerable number are destroyed every year. My select lot will, when planted, be in three rows, the back row consisting of the tallest, the next row medium, and the front row dwarf. To keep them uniform, any that run up too high for the row they are in, are topped. As hollyhocks are never presentable from head to foot, my best bed has a frontage of three rows of dwarf roses. Here is the arrangement of the hollyhocks for the present season:—

The names and colours of the varieties are as follow:—

Back Row, tall.—1. R. B. Cant, rose. 2. Royal Standard, crimson. 3. Plutarch, plum. 4. Astrosanguinea, crimson, coarse. 5. Pearl, pearly white. 6. King of Yellows. 7. Black Prince, black. 8. Walden



SULPHUR QUEEN IMPROVED.



GALEN.

Masterpiece, canary. 9. Euphemia, flesh
10. Harriet, mauve, 11. Queen of Beauties, peach. *Middle Row, medium.*—12. Hon. Mrs. Ashley, lilac peach. 13. Beauty of Walden, carmine. 14. Agnes, flesh pink. 15. Sulphur Queen, yellow. 16. Black Knight, black. 17. Beauty of Dy-sart, rosy blush. 18. Ceres, salmon. 19. Narcissus, white. 20. Ceres Unique, cherry crimson. 21. Galen, lilac blush. 22. Lady Helen Stewart, crimson. *Front Row, dwarf.*—23. Violette, violet. 24. D'Israeli, crimson maroon. 25. Amaranthus, lilac. 26. Vivid, crimson. 27. Optima, straw and pink. 28. Annie, white and chocolate. 29. Negro, glossy claret. 30. Cato, crimson puce. 31. Mignonette, cerise and salmon. 32. Geant des Batailles, crimson. 33. Lizzie Roberts, white.

for adepts as an easy way of managing kinds that are shy in rooting. Look for the "work" at the collar of the plant, and on the side of the stem make a small notch with a sharp knife, as at B in the figure. Plant the root so that this notch will be an inch and a-half below the surface; and in filling in round the roots take care to place a trowelful of quite dry sandy soil immediately around the notched part. The notch will soon heal, being surrounded with dry soil, and will then throw out roots, and you will have accomplished the feat of changing a worked rose to a rose on its own roots, with the least imaginable trouble. Apply the same practice to roses of all kinds that fork near the ground; make a notch in every one of the shoots on the under side, so that when from the

1	2	3	4	5	6	7	8	9	10	11
<i>Back row, tall.</i>										
12	13	14	15	16	17	18	19	20	21	22
<i>Middle row, medium.</i>										
23	24	25	26	27	28	29	30	31	32	33
<i>Front row, dwarf.</i>										

ROSES, AND HOW TO MAKE THEM PROPAGATE THEMSELVES.

Is it too late to plant China and Bourbon roses? It is not too late to plant any and every kind of roses that can be obtained in pots, but it is too late to lift roses from the open ground. I have several times explained in these pages that in case of emergency, roses may be lifted and replanted with perfect safety at any season, except during hot sunny weather or severe frost. I planted three standards on the 10th of July last year, to make good three that perished after having commenced to grow in the spring. The month of April is the best in the year to stock a rosery from dwarf plants in pots. In ordering them from the nurseries, say *all dwarfs; own roots preferred*, and you will obtain nice stocky plants in 54-sized pots. If the ground is in proper condition, it is but a mechanical affair to turn them out into their places, and see that they do not suffer for want of water all the summer. They will bloom beautifully in the autumn. Every planter of roses should be able to tell at a glance if the roses are on their own roots, or if worked on Manettis. Last year I adopted a new method of planting, and I can now tell you how to multiply roses with no trouble at all; this for the comfort of those who cannot strike them either from eyes or cuttings, and also

incisions roots are thrown out, it will be an easy matter to cut them apart and make a plant of every one. Roses that branch away from near the roots may be operated on without disturbing the roots,



Fig. 1.

and if some sandy stuff is heaped round nature will do the rest, and form large mats of roots before next winter. You see this is capable of many variations; it

is, in fact, itself but a variation of the system of layering and circumposition, about which a few words must be said next month

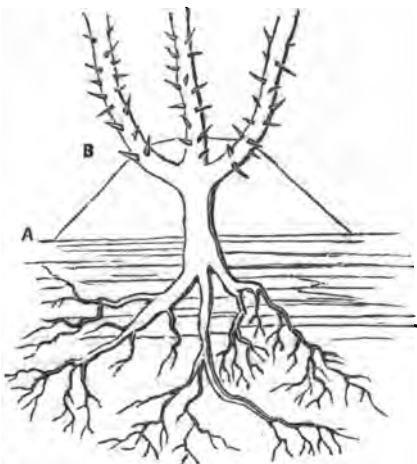


Fig. 2.

Fig. 2). I tried a few China roses as represented in Fig. 3. I first cut a few inches of the softest growth from the point of a shoot, then stripped off the leaves half its length, then bent it and thrust it down into a slung bed, where it was fixed with a peg. Nothing can be simpler for people who have never practised propagating; the pot is soon full of roots, and the inserted buds throw up rooted suckers.

COLOUR.

This subject is usually treated of at length in these pages at this time of year. At page 185 of the third, and, page 89 of the fourth volume, are some notes *in extenso*. It occurs to me to remark, that gray is a good relief to any bright colour, and that is the reason why plants with variegated foliage tell so well in a brilliant scheme of bedding. Scarlet and gray is a ten times better combination than the odious scarlet and yellow we shall soon see in all the little gardens, when Tom Thumb geraniums and calceolarias do their best to annoy the eye that can appreciate a happy combination. What can surpass the margin of Cerastiums, a ring of blue obelia, and a centre of Tom Thumb, or

Crystal Palace Geranium. There you have gray, blue, and scarlet. What is the best match for Magenta? I saw a lady a few days ago dressed in Magenta, mauve, and scarlet. It made me ill, and I cannot call it to mind now without a shudder. The best match for Magenta is a peculiar light green, the shade of which you will soon discover by trying a few green ribbons beside woollen Magenta. The rich green of grass turf is the best match for all the flowers described as Magenta in the catalogues. Mr. Rogers, of Bunhill Row, sells the Society of Arts' shilling box of water colours, which I find very useful in sketching a scheme of planting, or determining hypothetically the relations of tints and compounds. Light must be considered as well as colour in selecting flowers; those with white or yellow eyes have very different effect to those without eyes; this is particularly the case with scarlet geraniums and verbenas. Geranium Reiddii has a very white eye, and is for that reason brighter than Crimson Perfection, which is the same



Fig. 3.

shade of scarlet. In colouring a set of beds, never put your highest colour in the centre. It is a common practice but a very false one as a matter of art. A centre bed of a strong yellow will draw the eye away from all the rest, but a neutral bed of some half tint or variegated foliage, with yellows and scarlets balanced in the outer parts of the pattern, will enable the eye to roam from point to point with pleasure, and the design will look spacious and rich if the blues and purples and intermediate tints are in sufficient proportions to divide attention with the whites, reds, and yellows.

VIOLA TRICOLOR.

Mr. Howlett sent me last year a pinch of a variety of *Viola tricolor*, which he uses for those chameleon borders which were described by him a year ago. It is the best connecting link between herbaceous border plants and true bedders. I know one row I had of it of about a hundred feet was admired last summer by all who saw it. Before it got tall I cut it down, but it is a long while breaking and blooming again. The flowers are purplish blue, most abundantly produced, and held up nicely above the fresh green leaves. I had it as a front row to a collection of herbaceous plants, but it was so gay and trim that it may be classed as a true bedder, and we had better call it the "Blue Heart's-ease." I saved a large packet of seed, and any who would like a pinch can have it by sending stamped envelopes directed to me at Stoke Newington. Applicants are requested not to inclose queries with the applications, as I cannot attend to the letters myself. Sow the seed in pans, prick out into pans, and finally plant when the plants are stout and leafy; and, if you like it, save seed and use it hereafter in ribbons and the outer margin of beds. If any plant produces flowers with the slightest tint of yellow, root it up, and destroy it instantler.

ORNAMENTAL GRASSES.

I had a set of grasses from Messrs. Carter last year, which were grown in clumps on a bank with small conifers. Many of them were kinds that were never described in former notices; a few are new, and remarkably beautiful. *Zea mays*, there are several varieties of this, differing only in the colour of their cobs, all equally superb in foliage and gigantic stature. They rise five or six feet in a deep, rich loam, and give character to a collection of foliage plants. Sow at once in pots, and place on a hot-bed, and plant out the first week in June. *Holcus saccharatus*, African varieties, bearing curious names, such as Ormsee-a-na, Boom-vwa-na, etc., etc. They produce broad leaves, which fall over most gracefully—the foliage a bright green, blotched with rich brown. No one need have the set, as they are much alike, and all beautiful. Treat the same as *Zea mays*. *Eryanthus Ravennæ*, as beautiful as the pampas grass; and to be sown in pots, and planted out. *Panicum Italicum*, sow in the open ground; *Sorghum bicolor*, sow in the open ground; it blooms early, and bears an abundance of millet seed; very graceful and attractive. *Stipa pennata*: this fine old grass is a troublesome thing

to grow from seed, but it is perennial and may be divided every spring like a herbaceous border plant. Get a few plants of it, instead of taking trouble with seed. *Brisa maxima*, dwarf and pretty; sow in patches on the border or bank. The following are especially worthy of selection: *Agrostis nebulosa*, *Avena sterilis*, *Chloris radiata*, *Hordeum jubatum*, *Lagurus ovatus*, *Pennisetum longistilum*, *Tripsacum dactyloides*, *Cyperus alopecuroides*. There are fifty others worthy of a place in an ornamental garden, and a collection would afford much amusement and instruction. The common *Carex* of the bogs is a charming garden plant and useful for the front row of a peat bed.

OLEA FRAGRANS.

Those who grow this lovely *Olea* should work it on young plants of common privet, which is a quicker method than striking cuttings, and produces stronger plants; the privets should be potted and put in a gentle heat to get them strong for working. If you lose the grafting season, inarch them.

HYACINTHS OUT OF BLOOM.

These are generally thrown away, but there is no good reason for doing so. We can grow them as well in this country as the Dutch; and the way to keep up a stock is to have three beds, and let them follow one after the other: No. 1, for offsets and weak bulbs; No. 2, for bulbs that have flowered, and are put out to finish growth and ripen; No. 3, for bulbs to use next season for display. They should never be allowed to bloom in these preparatory beds, or not more than one flower allowed to open to prove them true to their tallies. Bulbs now going out of bloom to have their flowers clipped off, but the flower-stem not cut; the roots planted in rich sandy loam, with plenty of turf in it, and to be handled tenderly in turning out. Store them when ripe; next season plant in No. 2 bed, and when the spike appears nip it out or leave one bud to open. The next season grow them in No. 3 bed, no bloom to be allowed; after that use them again for display. Considering the value of a few hundred or few dozen, this system will pay.

BERBERIS.

My collection of species have all bloomed this season, and I expect fruit on *Japonica*, *Intermedia*, and *Bealii*. These three are equal to all that has been said about them, magnificent shrubs, and as hardy as any in our gardens. *Glumacea*, *Dulcis*, *Darwinii*, *fascicularis hybrida*, *Jamesoni*, *Hookerii*, and *trifurca* look beautiful now

with their new growth and abundance of yellow blossoms. Some day I must go into this subject at length. I do not grudge the half guinea apiece for four-inch plants of Japonica which I had of Mr. Standish when it was first sent out. Most of my choice Berberries are on a raised bank of very rich sandy earth, freely exposed to a constant draught when the wind is north-east.

THE WEATHER.

This is likely to be a wet spring, as there are arrears of rain due to us. It is likely also to be a hot summer according to the revolutions of the eleven year cycle, in which I am a firm believer. But there is no definite reliance to be placed on tables or predictions. The last season was better even than we thought; as witness the abundance and quality of potatoes now;

they have not been so good and cheap for seven years past. They are being most extensively planted now, and the Fluke has taken the lead as the most profitable and certain. Gardening ought to teach us how little we can depend on our own wisdom and our own strength. Paul may plant and Apollos water, but God giveth the increase.

Time passes, or I should like to add a few remarks on preparations for the coming season. For the present I will wish you joy in all your undertakings, and trust you will now join me in acknowledging the mercy which has kept us till the opening of another spring.

"From dearth to plenty, and from death to life,
Is Nature's progress; when she lectures man,
Is heavenly truth: evincing, as she makes
The grand transition, that there lives and works
A SOUL IN ALL THINGS, AND THAT SOUL IS GOD."

SHIRLEY HIBBERD.

GLADIOLI.

TWENTY-FOUR CHEAP HYBRIDS OF THE FINEST QUALITY.—*White striped and stained.*

—Ceres, pure white, stained with purplish rose, large flower, very fine spike. Marie, pure white, stained with deep carmine; excels in beauty the favourite Bertha Rabourdin. Madame Basseville, upper divisions bright rosy cerise, with white stripe; lower divisions yellowish, edged with rose, and stained in the centre with rich purple. Bertha Rabourdin, pure waxy white, with beautiful large carmine stain. Empress, fleshy white, stained with rosy carmine. Helene, white tinged lilac, striped and spotted purple. Jeanne d'Arc, white, tinged with rose, and striped with reddish purple; beautiful.

Yellow and Orange.—El Dorado, fine pure yellow, lower divisions striped red; very distinct. La Quintini, clear light orange; very brilliant. Doctor Andry, clear bright orange; beautiful shape. Duke of Malakoff, orange red, flamed with lighter stripes, sulphurish white throat; fine. Egerie, delicate orange rose, shaded; very large. Sulphureus, sulphur, fine for clumps.

Red and Crimson.—Achile, clear currant red, with white stripe in the middle of each division. Pline, very delicate cerise of exquisite tint, shaded to white in the

centre; beautiful. Princesse Clothilde delicate salmon rose, large purple stains on white ground; very large flower. Raphael, deep brilliant vermilion, centre white shaded with purple. Rembrandt, very bright deep scarlet. Brencchleyensis, most brilliant vermilion scarlet; invaluable for clumping. Comte de Morney, dark cherry red, with large white stain striped with purple; fine. Couranti fulgens, bright brilliant crimson, fine shape. Goliath, light red, shaded and striped with carmine spots; very large. Mrs. Conder, rose, light, carmine, and deep bright crimson shaded and blended. Oracle, cherry rose.

THE BEST TWELVE OF 1861 (Standish).—Lady Caroline Legge, snowy white, brilliant feather of purple-crimson. Ketteri, vivid crimson. Goldfinch, delicate primrose. Miss Graham, snow white. Colonel Hood, deep scarlet. Madame Leseffe, white, with plum-coloured feather. Colleen Bawn, striped carmine. Rose of England, bright cerise. Mr. Rucker, deep cerise, white throat, cerise feather. Mrs. Reynolds Holl, white striped, and tipped lively rose.

Plant at once in light sandy loam and leaf-mould, or in peat-beds. Dung should only be used for top-dressing, not to touch the roots.

USEFUL CONSERVATORY PLANTS.

PLANTS that flower during the winter and early spring months, without the aid of stove heat, are of especial value; for it is not to be presumed that every one who is fond of flowers *must* possess all the requisites for a large floral establishment. Many who are good amateur florists, and like to have flowers at all times of the year, have nothing but a greenhouse or conservatory in which to grow and display them; a great object, therefore, is to have such plants as flower in a greenhouse temperature (readers might be of great benefit to each other in giving accounts of their experience in this matter); there are many plants having this property, but they are as yet very much scattered. I lately saw in a neighbouring garden, a plant in full bloom which flowered the whole winter through; it is called *Condolea tetrandra*, and there is a companion species called *Condolea cuneiformis*; the flowers are yellow, the habit of the plant bushy, rather twiggy, and close, the leaves like privet and of a lively green. I should like to hear if it is known. [Yes.] For conservatory decoration, to follow *chrysanthemums*, there are heaths and epacris, *leschenhaultias*, *correas*, daphnes, tree carnations, *Monochætum ensiferum*, *Primula sinensis*, and where they have had a little heat in the spring time, *camellias* add to the list; *salvias* often continue flowering late into the winter. *Pelargoniums* and *fuchsias* will often do the same, but their flowers are disproportioned to the rise of the plant, and are seldom satisfactory. Even with these the list is small, as far as I know; but these conservatory decorations need not be confined to flowering plants: orange-trees with the fruit on look beautiful; *Solanum capsicastrum* with its red berries, and many plants of striking and graceful foliage have their charms. *Acacia pubescens*, and *lopantha*, *aracarias* and *berberies*, *Centaurea gymnocarpa*, and *ragusina*, *Cineraria maritima*, *Farfugium grande*, and many more such plants, arranged among the flowers, give an air of cheerfulness in the depth of winter; but we must depend mainly on heaths and epacris for flowers, and of these it is more particularly my object to speak. Of *Ericas*, there are several good winter and spring-flowering sorts, as *Abietina*, *Cerinthoides*, *Cliffordiana*, *colorans*, *caffra*, *Linioides gracilis*, *hyemalis*, *Monsonia*, and *verticillata*. Of epacris, the best for decoration are the erect-growing sorts, as *impressa* and its varieties, and *hyacinthiflora*,

they being more compact, give a large quantity of flower in a small compass; some of them begin flowering in September, some in November, others later, and are over in proportion from January to April; they last in bloom from two to three months; when past, let them have a month's rest, keeping moderately dry, then cut off the shoots containing the dead flowers, still keeping them moderately dry; a plant pit is then the best place for them, give plenty of air, uncover them quite at every opportunity, when they are starting into full growth; give them a shift if required, but they do not require a great deal of pot room, only see that they are not starved for want of it. Use in potting turfy peat, chopped and rubbed through a coarse sieve, using the fibrous portion to cover the drainage, mix plenty of sand and broken pot, or sandstone, or charcoal with the other part; use plenty of drainage and pot rather firmly, water two or three times, and place in the pit till they have taken good hold of the new soil. When about Midsummer they should be placed in the open air in the full sun. There let the new wood receive a regular roasting from its influence, and they will flower earlier and better for it, but shade the root by some means, which is easily done by wrapping something round the pots. Most plants flower better from having the wood well ripened in the sun; but I believe hard-wooded plants more particularly so, at least such is my experience. I would not recommend any one to attempt the propagation of these plants who has not an extraordinary stock of patience; but if any one feels inclined to try, the following is the process:—Wash some silver sand of any earthy or organic matter that may be in it; then dry it. Fill some clean pots about two-thirds full of drainage, then a layer of peat fibre or chopped sphagnum; then fill to within half an inch of the top with an equal mixture of peat and silver-sand, then fill up with washed sand, and water from a very fine rose till the whole is moistened through; then take off small shoots of heaths or epacris, near the collar if possible; they should be not more than an inch long; cut them with a very smooth cut, and carefully remove the lower leaves; mark a circle with a bell-glass on the sand in the pot, dib the cuttings within this circle, about an inch or so apart. Watering them from a rose would wash them up, so that it is necessary to settle

them in by allowing water to drip on them from a small flower-pot with a peg in the side of it; then cover with a bell-glass and place in a shady part of the greenhouse where no sun can get at them, and they will probably strike root in nine months; at during all that time the glass must be taken off and wiped every day, or the cuttings will damp off; being very small, a little sun would dry them up; watering them without due care would wash them out of the soil; allowing them to get dry would be certain death. If plunged in a very gentle heat they might root quicker, but require great care, in a year's time they might be ready to pot off into thumb pots, and after three years of unremitting care they might possibly flower, and will certainly do so the fourth year; but any one who has a mind to save all this trouble, may purchase nice healthy young plants, in flowering condition at the rate of 2s. 6d. each, nor are they dear at that, considering the time and trouble of raising them. The men who propagate these hard-wooded plants must be skilful and trained to the work, and require expensive appliances, that amateurs who fail in the attempt

to propagate ericas and epacris should not be surprised; the propagation and culture of both ericas and epacris are alike, they require plenty of water when in full growth and in flower; and although they are by no means tender, bearing several degrees of frost without injury, still they are better kept from it.

If I do not obtrude too largely on your space, I would say a word respecting a plant case exhibited at the Horticultural Society's show in November last, and which was awarded a prize. Unlike the Waltonian case, which is for the propagation of plants, this is to display them while in bloom—a sort of improved Wardian case, which I think quite an acquisition in the process of window gardening. When an invalid lady makes in-door gardening her occupation and delight, collects such appliances as are known, and improves upon them, and at length produces a plant case in itself an ornamental piece of furniture, besides its purpose as a plant case, she deserves the esteem of every lover of Flora; if Mr. Pickard enters into a spirited manufacture of these cases, I believe they will find ready purchasers. F. CHITTY.

EUPHORBIA JACQUINIFLORA.

its beautiful plant is increased by cuttings taken off in April, and planted in light, rich, sandy soil, plunging the pots in strong hot-bed. I have two methods of culture for this plant. First, when low, shy plants are wanted, take strong cuttings of well-ripened wood, six inches long, and plant five in a small thumb-pot, having first placed a little moss at the bottom, filling up the pot with pure white sand, plunging in a good hot-bed; in the course of two or three days I water copiously. When the plants have made shoots three or four inches long, select the two strongest pots on each cutting, rubbing off all the others. As soon as the two shoots have become firm, I cut them back to three inches each, which causes them to form beautiful bushy plants, taking care to nip the ends of all straggling shoots till September, when the points are all taken off. The plants are repotted, as the roots near through the bottom, in a very rich, light soil, removing them to the back bed of the stove, giving water in abundance; this method bushy plants with drooping, tender branches are obtained. When the plants have done flowering, water is with-

held for a week or ten days, when the plants are pruned back to two eyes on each original shoot, and placed in a cool greenhouse or shed. I find if the pruning is delayed, that the eyes at the end of the shoots break first, which causes the long and straggling plants so often seen in collections, whereas, if pruned immediately, the plants are not exhausted. When it is wanted to excite the plants for the following winter, plunge them in bottom-heat and supply water; by this method flowers are produced from October to February.

Second method. Take the strongest cuttings that can be got, cut them in lengths each containing four eyes, plant them singly in thumb-pots in light, rich soil, leaving two eyes above the soil; plunge in a good hot-bed, supplying water. When the shoots have attained one inch in length rub off the weakest, when twelve or fourteen inches long remove to the greenhouse to harden; care must be taken not to break the roots, which will be found, on removal, to have run through the bottom of the pot. Repot them in No. 24, using a good portion of ground bones in the compost; train them singly to sticks. They

will not flower much the first season ; in April following cut down to two eyes, select the strongest shoot, repotting, supplying plenty of water. Keep them in a warm greenhouse, and with proper management they will be about four feet long and three quarters of an inch in circumference. These plants will flower from February to May, when the plants are cut down to one

foot high and plunged in the stove, will flower again from the end of August to November, the plants are then thrown away. By this method the largest flowers are obtained, often in clusters of six or eight at the axis of each leaf from a foot above the pot.

Millhaven.

J. FORBES.

LITTLE GARDENS AND FLOWERY WINDOWS.

(Continued from page 51.)

MANURES.

WE believe it is designed that the animal, the vegetable, and the mineral kingdoms should aid and assist each other in every conceivable manner—from the grass furnishing food to the cattle and the cattle returning food to the grass, in the form of dung, to the breath of perfume-laden air which we inhale, and which may contain, for aught we know, the elements of those substances which philosophers tell us are found in minute quantities in the human body. This view of the matter would appear to open at once an important question—May not the culture of plants and flowers in populous places be regarded in a sanitary light as well as one of mere ornament and instruction ? It is established beyond dispute that there is a constant interchange of gases between animal and vegetable life ; and although, as in the case of the forest, a large amount of vegetation may exist with a comparatively small amount of animal life, and in the case of populous cities, vast masses of men and beasts may congregate where there is very little vegetation, yet we believe it is more consistent with the natural order of things that there should be a due proportion of each. The knowledge obtained from the progress of the aquarium will illustrate this, and the eager desire town people evince for the beauties of Nature, and for the art of floriculture, will do so still more. But it may be asked what has this to do with the subject of manures ? Simply this, that it is given to plants to receive and to appropriate the cast-off materials of animals ; therefore, all animal matter, if consigned to the earth, will be sought and absorbed by the root, of plants. It is also well known that plants feed upon decayed vegetable matter, and also that they have the power of dissolving inorganic matter, since flint and

other minerals are found upon examination of the ashes of vegetation. It is foreign to our purpose to recommend any particular process of manuring, which, however well adapted to the circumstances of one, are wholly inadequate to those of others, because we know the most ridiculous mistakes, and often the most fatal consequences, accrue from adopting an assertion without due qualification. For instance, we hear that human excrement, both solid and liquid, if freely diluted with water, may be administered to free-growing plants to advantage. This we know to be true, since we have tried it ; but we have also known many plants destroyed by it. That which will infuse life and vigour into a chrysanthemum will prove wholly destructive to a rhododendron, and even what is beneficial to a full-grown plant may destroy a young plant of the same kind ; therefore, we would recommend all, if they value their plants, to err on the safe side, and use caution in applying stimulants the nature of which they are unacquainted with.

The art of plant growing is not taught in books ; these are useful to give the impetus and to direct our energies aright, but a true knowledge of the art is acquired only by attending to causes and effects. We shall content ourselves with observing that all decomposable animal and vegetable matter is good for manure, but as all such matter, if laid together, undergoes putrid fermentation, which is alike injurious to animal and vegetable life, it should quickly be consigned to the earth, or, if this is not convenient, it should be deodorized with some mineral. Lime is well known as a deodorizer, and as we never had occasion to use any other we cannot conscientiously recommend any other ; but this is effective, and improves the quality of the manure-heap ; so also does a little salt, and we be-

ever many things that are usually thrown away as useless may be applied to some purpose in the little garden. The main point is how to apply them judiciously.

We believe the most effective mode of applying manure is in a liquid state while plants are growing; but this may be not always convenient, and must be subject to certain considerations. The process of making and applying liquid manure may be considered a disagreeable affair, and we have no desire to offend the prejudices of our readers, although, as we before observed, lime and also mineral substances will remove all offensive smells. The process of manuring the little garden with solid matter cannot be done at all times. If a tub of liquid manure be at hand, this can be used in dry weather both as food and moisture to plants, but it should not be applied to anything that grows in peat, nor indeed to any plants but what are known to be gross feeders. Guano, both imported and manufactured, may be obtained in small quantities, which have only to be diluted with water to fit them for use; but liquid manure may be easily made by putting a shovelful or two of dung of any kind into a tub, which fill up with water, or room may be left to deposit therein any waste liquid from the house. Lime, salt, and soot in small quantities, may be added. Care should be taken that it is not too strong. Such mixtures as these form an important item in the process of preparing chrysanthemums for the metropolitan shows; but efficacy in chrysanthemum growing is not in the mere application of them, but by attention to causes and effects.

TOOLS OR IMPLEMENTS.

The implements required in a little garden are very few: first, a spade is necessary; then a small-tined, long-handled fork, for stirring the surface of the beds; a Dutch hoe, as every one knows, is for cutting up weeds, and for stirring the ground; a rake, to catch off stones, dead leaves, or whatever else might disfigure the borders; a trowel, for planting small things; a knife, the use of which will soon suggest itself; and a broom;—all these, with the exception of the broom, will last many years if taken care of. There is one instrument necessary in town gardening, which is generally the last thought of, but which is of the first importance—the syringe cannot be over estimated as an implement in town gardening. The impurities floating in the air settle on the leaves and stems; in time it forms a crust which completely stops respiration; the

plant cannot breathe, no wonder it sickens and dies. Now if the syringe is used night and morning, while plants are growing fast, and after that just sufficiently to keep them clean, they will be as healthy as in the country; this more especially refers to evergreen shrubs, the chief ornament of which is the bright foliage. There are thousands of them in and around London presenting a grim, sooty appearance, when, had the syringe been used freely during the summer and autumn, they would be looking as bright and lively as any in the country; let, therefore, the syringe be extensively used, and town gardening will soon wear a different aspect. We are averse to the use of the watering-pot amongst established plants; we consider that if the ground has been well broken to a good depth, it is best to induce plants to root deeply beyond the reach of sun and drought, by withholding water, which would only tempt them to root on the surface, but all fresh planted things require it till they have taken hold of the new soil. Where watering is done at all in the open ground, it should be done copiously, a vast number of plants are destroyed by mere surface watering.

Town gardens, it is well known, are subject to one provoking nuisance, which may be said to transcend all others, and of which the cats are the authors; a fair sprinkling of strong snuff scattered in pussy's haunts, when the ground is dry, may produce such a fit of sneezing as to give her the headache, and induce her to avoid the spot; a more expensive, but more durable plan is, to surround the garden with wire netting, which, if properly managed, will be effectual.

THE WINDOW.

Of the merits of window gardening as a useful, instructive, and ornamental art, there can be no two opinions; many who are truly devoted to it rank high as useful members of society, and deservedly so, for we know of nothing that can conduce to the cheerful and attractive appearance of an English home, more than a window tastefully arrayed with floral beauties. That this department is becoming very popular is borne out by the fact, that the materials employed therein form a considerable branch of commercial traffic; we behold wire stands, arms, suspenders, baskets, etc., also vases, fern-cases, etc., of great variety of shape and pattern, exhibited in various shops in vast numbers; we see them, too, in windows applied to their proper use, showing that numbers appreciate this beautiful art. But although

it is widely extended, there is yet room for a much wider extension; there are thousands who have no plants in their windows, and thousands more who exhibit nothing but the leafless stem projecting from the pot on the window sill. Our objects are twofold: first, to persuade those who grow no plants in their windows to begin at once, we promise them a pleasure and gratification from it that will repay them well; secondly, to show how it is to be done. Those who have one or more windows to grow plants in, had better be content with a small quantity; those who have a little garden, or, still better, a frame, can increase their stock. Those who have a window facing the east, south, or west, may grow any flowering plants; those who have a window facing the north are favourably situated for growing ferns and lycopods. In the first place, some persons prefer having one favourite plant, which they desire to grow large and bushy, and give it the whole window, and their whole attention. Amongst plants suited as permanent window ornaments, we should invariably give the precedence to myrtles; these are evergreen, they diffuse an agreeable odour from the leaves, and they mostly yield a supply of pretty white blossoms in the summer. The soil for them is two-thirds loam, one of peat, freely sanded; but they are of a kindly nature, and will flourish in almost any soil (we give that which professional growers generally use). To keep them bushy the tops should be pinched off in time; they will stand a considerable frost, but it is much better for their health and appearance not to expose them to it. There is one thing of vast importance to the health of a plant, which is seldom attended to: if a plant in a pot is exposed to the hot sun, it will be found that the side on which the rays directly fall has been heated to such a degree that the roots within are killed, actually burnt to death; this, in ninety-nine cases out of a hundred, is the cause of that starved appearance presented by the majority of window plants. The remedy is simple enough, the pots should be covered, and there are fifty modes of doing it: bind something round the pot, or make a neat covering of coarse brown paper, or stand them in larger pots, or in vases made for the purpose, or put a screen across the window-sill, which may be of board, of felt, calico, paper, or anything else, no matter what, as regards the plants, so long as it is something; it is against all the laws of Nature and common-sense to expect a plant to do well if its roots are allowed to be burnt by the sun. Another circumstance

which refers to all window plants is, the tendency they have to become one-sided, or to turn their face towards the light; this is natural, and should not be counteracted, except by tying the shoots back. The next thing to a myrtle we should prefer is, *Malva capensis*, because it yields its pretty pink and white blossoms during the whole summer and autumn, and is of easy culture; next to this come veronicas—*Veronica urticifolia*, well known as the nettle geranium of cottage windows, is of too coarse a habit, and of too gross a nature, to entitle it to the first place in the window, where *V. Andersonii*, or *V. Lindleyana* can be obtained; these are of very easy culture, and will grow in any soil, they are of fine habit, and bloom very freely in the autumn. Scarlet geraniums are very commonly used for the purpose, and these again are of easy culture, and will repay the attention they receive; a well-conditioned plant, two or three years old, will yield a perfect blaze of scarlet blossoms during the summer, and sometimes in the winter they continue to bloom. There are numerous other kinds of plants all having their own peculiar merits, as *Genistas*, China roses, geraniums of various colours, hydrangeas, etc., *Aloysia citriodora*, or lemon verbena, Balm of Gilead, *Diosmas* of various sorts, all valued for their delightful odour; others, as the common monardella, *Saxifraga sarmen-tosa*, *Disandra prostrata*, and many more that might be named, are of pendulous habit, suited to be slung in baskets, and treated in this way they enhance considerably the tasteful appearance of the window. Again, for climbing around the window, or over a trellis, such plants as *Calystegia pubescens*, *Maurandya Barclayana*, *Lophospermum scandens*, and other climbers, might be named. All that we have named, and most plants that are grown in the window, are of easy culture, and will grow in almost any soil, although those who grow them for sale generally use about two-thirds loam, one of well-rotted dung, freely mixed up with river or pit sand. When they have filled the pots with roots, if it is not convenient to shift them into larger, it is easy to keep them in health and vigour by a judicious application of liquid manure; this at first should be very weak, but may be increased in strength as the plant gets used to it; the proper mode of administering it is only learnt by practical experience, but it is best to err on the safe side, and not apply it too strong or too often. In potting a plant, nothing can be of more importance to the success of the operation than the manner in which the pots are drained; this is generally hurried

over by placing a stone or crock over the hole, the only purpose of which is to stop up the latter. If it is desired effectually to drain the soil in the pot, let it be done in this manner: place a piece of broken pot over the hole, let the concave side be downwards, on this throw a small handful of pieces of pot or small stones, about the size of raisins, on these again lay some rough peat, moss, or coarse earth, which will not readily fall to pieces; having done this, the operation is complete, and the setting of the plant may commence. In doing this, even, a great mistake is often committed—the pots are filled so full that it is impossible to water them properly. Fresh potted plants should have the earth thoroughly wetted through when they are watered; this can only be done by filling the pot with water two or three times. As before observed, where a garden-frame can be employed to supply the windows with flowering plants, it is much more convenient, and may be done in a much cleaner manner. A few bulbs are potted in the autumn, these can be kept in the frame all the winter, and, as they come into flower, can be removed to the window; as they cease flowering, a few cinerarias may succeed them, these again by scarlet geraniums, verbenas, salvias, or other summer flowering plants, which will last till chrysanthemums begin to open; these last continue till December, when two or three dwarf evergreen shrubs will maintain a fresh appearance during the winter. All this may be done with the aid of a frame, and, indeed, more, a greater number, and greater variety of plants may be grown, consequently a more frequent succession. Where there are several windows to supply, can be done conveniently by means of a double-light frame, in it the seeds of annuals can be sown; many of these are very use-

ful as window ornaments; many of them, especially mignonette, *Saponaria calabrica*, *Nemophila insignis*, if sown in the autumn, and kept in a frame during the winter, will flower early and strong the following year, when they are admirably adapted to the suspended basket, for which they are fitted by their trailing and pendulous habit. The frame is also useful for striking cuttings; those of any half-hardy plants will root freely, if placed in a pot half full of soil, and covered with a piece of glass, and placed in a frame; also the young shoots of roses, if treated in the same manner, will root and make blooming plants, the same year. It is never worth while to grow the old chrysanthemums; we see this done very often, but if a cutting or offset is taken off while the parent is in bloom, it will make a larger and far handsomer plant than the old one. A north window is very favourable for growing ferns; these are valued for the beauty of their foliage, and as the hot sun destroys that fine dark-green colour for which they are admired, and otherwise disfigures them, they are best kept out of it. Ferns may be treated much the same as other plants, the soil they will thrive in is about three parts loam, and two parts composed of leaf-mould and sand; but the hardy British varieties will do in any soil, they like plenty of moisture, and should be frequently sprinkled from a fine roset watering-pot. Those kinds mentioned in a former page will do for window culture; some others may be preferred, as *Pteris arguta*, *P. rotundifolia*, *Asplenium lucidum*, and *bulbiferum*; many more might be named, but those we have stated would fill several windows, we think it, therefore, needless to mention any more.

F. M. CHITTY.

(To be continued.)

THE CONSTRUCTION AND FURNISHING CONSERVATORY WALLS.

THE growth and preservation of tender plants in the open air has long engaged the attention of horticulturists, and with varied success. To acclimatize an exotic as ever been the highest and nicest point of gardening operations, so many and such opposite obstacles are to be surmounted; at what will not perseverance guided by sound principles overcome? It is true there are some plants that appear to be beyond our control in this matter, and that, too, without any assignable reason; at this only makes apparent the small

amount of knowledge we possess of the laws which govern vegetable organization, for notwithstanding all our boasted advance, we are yet far, very far, from understanding the causes of many of the most simple phenomena which occur daily before us; this, however, should only instigate us to renewed and stronger efforts to obtain the necessary knowledge. We have already several instances of the successful result of what was probably only the chance of trial and failure, but still of sufficient importance to induce the experi-

mentalist to make further trials; as a familiar instance, we mention the *aucuba*, which originally was considered and treated as a greenhouse plant, but is now found growing luxuriantly in every situation. How much we may be justified in expecting, as we become more and more acquainted with the governing causes which affect the vitality of vegetation, we will not pretend to determine.

To inure an exotic to the rigours and changes of our seasons requires some considerable time and preparation; it is not reasonable to suppose a plant can in one or two years so change its constitutional habit as to withstand uninjured either the one or the other, for it may be that the periods of excitement and rest natural to it are directly opposed to our seasons; so that to effect this, the first and most material alteration in the character of the plant, time is the principal agent. In most cases it may be forwarded a good deal by employing a medium position for the first exposure; that is, such a situation in which only part of the severities may be felt; and it is this which creates the value of conservatory walls: standing out in this manner, with properly constructed screens and other means of protection, the plant enjoys through the growing season an abundant supply of food; and if managed so as to be allowed the necessary time to elaborate and mature its acquired secretions, there will be but little danger of its receiving any material damage through the winter season. The construction of these walls must be determined in a great measure by the description of plants intended to place against them. For many of the finer sorts of greenhouse plants it is necessary that flues be added, and indeed a glazed front; but as this is an expensive erection, and we are not now writing for those who can employ an architect, we will reduce the scale of our ideas, and suppose a wall to be standing, rather an unsightly object, perhaps, and which it is desirable to cover; we will suppose also that camellias form a principal part of the subjects intended to plant against it (if deciduous shrubs are used it will be much easier); the situation should be one facing to the south-east or the south-west, either of which is preferable to due south. The first proceeding will be to prepare the border; the natural earth, unless very good, should be removed to the depth of about two feet and a-half, a third of the excavation should be filled up with stones and brick rubbish, to drain off superfluous moisture; this is the most important part of the whole, for if the bed is not thoroughly cleared of any excess of

moisture, all other endeavours will fail. On these stones a thin turf may be laid all over, to prevent the earth falling between them. A mixture of loam and peat, with all the turf-sticks, etc., contained in it, should be well chopped with the spade and mixed with some rich garden-mould; this will form a compost to fill up the remaining space, and in which almost any plant will thrive. The most proper time for placing the plants in this their new situation is the month of May; our reasons for considering it best is that danger from frost being past, the new wood will have more time to become matured before the approach of winter. With camellias, however, it is necessary that the young shoots be pretty firm, or they are liable to receive a check which it is difficult to get them over. Immediately after planting, the whole bed should be well watered; but it is preferable to defer the nailing and training until the plants have taken a little hold, after which they should be extended as far as possible, and pruned rather thin, that the new branches may have the full influence of sun and air.

The means of protection to be used through the winter should be of the simplest construction possible. A light wooden rail, fastened to the top of the wall, from which slanting pieces depend, to the ground, at a distance of about four feet from each other, and the lower end projecting about the same from the foot of the wall, will be all the framework necessary; on which a piece or pieces of flexible canvas may run by means of lines and pulleys, so as to allow of its being rolled up or down easily. The use of continuing the covering so far from the base of the wall is to retain about the plants the radiated heat given off from the surface of the earth beneath the canvas.

With this simple contrivance, which may be removed entirely in summer, very many fine plants may be grown to a greater luxuriance than is often seen when completely under glass. In the management of these walls it must be particularly observed to avoid anything like an early excitement; in the early spring months we frequently have a few hours of hot sunshine, succeeded by cutting winds or frost. These changes are more injurious to the plants than the severest continued weather, from the action of the sun causing a reaction in the system of the plant, which, ever ready to recommence its seasonal activity pushes its sap in a very short time to the extremities of the shoots, and there, on the succession of cold to this brief impulse, it becomes coagulated or frozen, and so dis-

ds the whole tissue of the plants is frequently to cause it to split; this must be carefully avoided, by refraining from exposing them to any weather likely to make it start, until a prospect is opened of its being. There need be no fear if the plants not even push till April or May, but that they will then do so with much greater ease. On the other hand, the autumnal colour should be maintained as long as possible, suffering them to receive all the benefit of the sun, that the wood may be thoroughly ripened.

With attention to these particulars success is made certain. The advantages derivable from this manner of growing plants are important, and easily made apparent, for beside the satisfaction of being able to grow handsome plants, where be-

fore only coarse climbers would succeed, or having valuable in the place of common plants, we must consider the ultimate effect produced on the constitution of the plant, and the increased probability of its being by these means induced to withstand all attacks, even without shelter; the received opinion being that all vegetation will endeavour to form its tissue in accordance with the situation and circumstances under which it is produced. In former pages of this work will be found numerous lists of plants which nearly succeed in the climate of Britain, where it is said a south wall and a mat in winter are necessary; the plant referred to is of the class requiring such protection as the above simple method will secure for it.

NEW ANNUALS AND BEDDING PLANTS.

(Abridged from the Catalogue of W. Thompson, Ipswich.)

be exercise of what we think will now be deemed a sound discretion, we omitted from our present list many of the seeds offered as novelties, and the result amply justified our exclusion.

We only regret that our selection was not unlimited, several having been admitted which seemed to be either without value, or identical species previously known. It is greatly to be lamented that a disposition appears to be getting up in certain quarters, not only needing to multiply varieties differing but in a very slight degree from the older ones—and many of so ephemeral that they revert to the type which they originated the first season they are grown by the public—but also to the adoption of style of description so exaggerated, that a sentence in its use cannot fail to bring discredit on the entire seed trade. An absurdity equally reprehensible is the accumulation upon certain fortunate plants of adjective terms to an extent rarely uncalled for. Why, for instance, should the beautiful *Linum grandiflorum* be condemned after it has the additional surnames of *hermaphrodite*? or what can be urged on behalf of “linked sweetness” as *Aquilegia formosa* is called? *Colocasia flore pleno*, *Calliopsis cardaminefolia* is *atro sanguinea*, *Phlox Drummondii* *Razii* *hermesina striata*, or *Calceolaria hybrida grandiflora præcox*. These are no creations of fancy, but are actual quotations from the catalogue of the present season, and many more instances could be given, but out of pity to our readers we forbear.

We avail ourselves of the opportunity of explaining that in the present edition two or three of the popular seeds appear under new names. We are fully sensible of the inconvenience resulting from frequent changes of this character, but an error in nomenclature is clearly proved, and the sooner it is rectified the better. The seeds to which we allude are those of *Hibiscus* *im hispidus*, previously *H. calis aureus*, *Hesum bracteatum incurvum*, in place of *H. semitum maximum*, and *Lobelia bicolor*, for *scillia*. It appears that the true *Lobelia* *s* has not yet been introduced, and the one cultivated as such was long since figured

and described by Dr. Sims in the *Botanical Magazine*, under the name of *L. bicolor*; that the *Helichrysum* differs only from *bracteatum* in having the involucre scales incurved, and its more varied colours, and that the *Hibiscus* is but a variety of the *H. Trionum*, and long since described under the above name by De Candolle. The expediency of reverting to the correct names, will, we hope, be evident, and as the older names are attached as synonyms, no practical inconvenience can result.

CALLIOPHYS PEDATA WANA.—This variety differs from the species in nothing but its comparative dwarfness, which renders it more desirable for general cultivation. In height it scarcely exceeds eighteen inches, while the original *C. pedata* usually reaches three feet or more before its growth is terminated.

CELOSIA AUREA PYRAMIDALIS.—Few persons would suppose this beautiful plant to be a mere variety of the common *Coxcomb*, *Celosia cristata*, the dumpy habit of the latter presenting the greatest possible contrast with the feathery elegance of the former. The foliage of the two plants is identical in form, but in place of the flattened or fasciated shortened stem of the *Coxcomb* we have, in the *aurea pyramidalis*, a plant branched in a pyramidal manner, the slender branchlets being clothed with small florets, most of which are abortive, and assume the form of glossy yellow scales. The plant, when well grown, produces an admirable effect, but needs for the full development of its charms both the warmth of a stove and some horticultural skill. The variety, *atro sanguinea*, is said to differ from the *aurea* only in colour, and in that case must afford a most effective contrast, but at present we have only cultivated the yellow form.

CLARKIA PULCHRELLA FLORE PLENO.—This is represented to be a very pretty double-flowered variety of the well known *C. pulchella*, and having received a first-class certificate from the Floral Committee of the Royal Horticultural Society, it is doubtless of considerable interest.

COSMOS DIVERSEFOLIUS ATROSANGUINEUS.—Under the name of *Dahlia Zimapani*, we cultivated in the summer of 1869 a pretty Composite

sent from Mexico by the Messrs. Roessl. From specimens sent by us to the Royal Gardens, Kew, the plant was figured and described in the Botanical Magazine, by Sir W. J. Hooker, under the name above given. In habit it closely resembles the *Dahlia glabrata*, but is dwarfer and more compact, not exceeding eighteen inches in height, and like that plant throws up on long footstalks numerous flowerheads, about two inches across, which are remarkable for their dark purple-brown colour. The shade varies somewhat in different individuals. Requires only the treatment of half hardy annuals, but being a late bloomer should be sown early. It is the *Bidens strosanguinea* of the German seedsmen.

CUPHEA ZAMAPANI.—This is another of Roessl's introduction from Mexico, very closely resembling the *C. lanceolata*, of which it may prove on further examination to be but a variety. It is a tall, branching annual, producing long terminal racemes of large dark purple flowers, which have a showy effect, but the foliage of the plant leaves something to be desired. It should be sown early on heat, and requires only the ordinary treatment of half-hardy annuals.

ECHINACEA PURPUREA.—Under the name of *Rudbeckia purpurea* this desirable hardy perennial has been long cultivated in the gardens of the more enthusiastic class of amateurs, but our observations lead us to believe that it is by no means generally grown. We are induced therefore to bring it specially under the notice of all lovers of herbaceous plants, by whom it cannot fail to be appreciated. It is a tall stately plant, of erect habit, bearing on the summit of each stem a single flower-head five to six inches across, with a conical disk, and long, narrow, drooping ray-florets of a reddish-purple colour. It is well suited for the back row of the mixed border, or for the centre of an herbaceous plot. The *Echinacea intermedia*, has shorter ray-florets, which are horizontally disposed, not drooping.

GIANT EMPEROR ASTER.—Of this fine section of the French or Peony-flowered Asters, at first represented only by a single shade of colour, from ten to twelve shades have at length been obtained. Their enormous flower-heads produce a striking effect, notwithstanding the somewhat formal habit of growth. Like the other varieties, they require the richest description of soil, and frequent watering in dry weather.

LINUM MONOGNUM.—The seeds we offer under this head are the produce of plants raised from seed sent out by a London firm under the name of *L. candidissimum*. Though differing from the older form of *L. monognum*, equally with itself a New Zealand plant, in possessing a freer habit of growth and flowering, as well as in being rather less hardy, we have been informed by Drs. Lindley and Hooker, to both of whom we submitted specimens, that it does not differ specifically from that plant, which is of variable habit, and of which it may be regarded as a mere form. Without being able to affirm it, we hazard the conjecture, that the older and harder form of *L. monognum* came from the Southern Island, and the so-called *candidissimum* from the Northern, which would explain the slight difference in their hardness. It is, in any case, a desirable half-hardy perennial, easily kept in a cold frame through winter, and yielding its pure white flowers abundantly throughout the summer. [This is a most beautiful white flowered *Linum*, which we have flowered three seasons in succession, and omitted to include it in our reports in the "GARDEN ORACLE."]

NEMOPHILA ATOMARIA OCULATA.—The original *N. atomaria* has white flowers speckled with dark blue, but a variety has been long cultivated under the name of *coelestis*, in which the corolla is of a delicate porcelain blue, with a few specks

only near the centre of this plant, which is the *N. Cramboidea* of some seedsmen; our present subject is a sub-variety, differing from it only in having a large blackish-purple blotch, with a jagged outline at the base of each lobe of the corolla, the whole forming a conspicuous central star. It has been grown with great care during the past season, and we believe will now be found quite as constant as can be desired.

GNOTHEIRA LAMARCKIANA.—This is described to be a hardy biennial of shrubby habit, flowering the first season, and producing a profusion of bright golden-yellow flowers, three to four inches across. [We know this to be a superb *Gnothera*.]

GNOTHEIRA MULTICAULIS.—The dwarf rose-coloured *Gnothera* from Mexico, appears to be the *G. multicaulis*, of Ruiz and Pavon, which occurs in Peru with yellow flowers, but was also found in Mexico by Galeotti, with red and reddish-brown blossoms. It is closely related to the *G. rosea*, also a Mexican plant, but is quite distinct from it, and we have, therefore, seen with regret that seedsmen likely to be well aware of the existence of the old *G. rosea*, should have given its name to the species under consideration, solely, it would appear, on account of the colour of its flowers! It is very dwarf in habit, with spreading or almost trailing stems, clothed with small ovate foliage, and produces its deep rose-coloured flowers pretty freely. It cannot be termed a showy or effective annual, and must be relegated to the second rank.

PHARIS LEBRI.—This really splendid climber is not introduced as a novelty, but seeds of it have never, we believe, been available till last season. For large conservatories or other plant houses, where there is sufficient room, it may be recommended as eminently worthy of cultivation, its large deep blue flowers, in clusters, being among the finest of the genus. Out of doors in our climate, it can only be said to succeed partially, even in the most favoured localities, but is worthy of a trial in warm summers.

PELOX DRUMMONDII WILHELM.—This new variety is described as an improvement on the *P. Drummondii* Radowitzii, offered last season, having flowers of a brighter and deeper crimson, and striped with white, *Radowitzii* being *streaked* rather than striped. We have no personal knowledge of its value.

SAPONARIA CALABRICA ALBA.—This is a pretty pure white variety of one of the best and most popular of the bedding annuals, to which it forms a useful and desirable compliment. Like the pink variety it flowers profusely till late in summer, and comes true from seed, but its blossoms are rather smaller.

SENECIO ELEGANS MAGENTA.—This novelty is represented to produce flowers of a bright rich magenta colour, distinct from other varieties in cultivation. We are personally unacquainted with its merits. It will probably give thirty per cent. of inferior flowers, and should be grown in a reserve plot, and the best plants be kept on from cuttings.

STATICE BRASSICEFOLIA.—A new and very fine species in the way of *S. Halfordii*, but of dwarfer habit. It is essential to success in raising this and the other shrubby species of this genus, that what is sold for seed, but which is in reality the terminal clusters of withered flowers enveloped in their woody bracts, should be pulled to pieces carefully over a sheet of paper, when the seeds themselves may either be picked out, or may be sown with the fragments.

TROPEOLUM CRYSTAL PALACE GRM.—This novelty, which we have not yet cultivated, is described as possessing sulphur-coloured flowers, spotted with maroon, the blossoms being abundantly produced and thrown well up above the foliage. It promises to afford an agreeable con-

trast to the more glaring tints of the orange-scarlet varieties of the same class, if it comes true to description.

ZINNIA AUREA LINDL.—This plant proves to be a new and desirable species to which Dr. Lindley has given the above appellation. It is a neat dwarf plant of compact habit, scarcely a

foot high, much branched, with ovate-leaves and numerous flower-heads about two inches across, the ray florets being of a full orange colour in the centre and paler at their margins. If sown early it blooms for a considerable period, but seems to require a warm dry situation, and in this country we think will rarely ripen seed.

APRIL, 1862.

PHASES OF THE MOON.—First Quarter, 7th, 6h. 12m. even.; Full, 14th, 5h. 57m. even.; Last Quarter, 21st, 6h. 2m. morn.; New, 28th, 11h. 26m. night.

30 Days.				Weather near London, 1861.				THE COUNTRY.
M D	W D	Sun rises	Sun sets	BAROMETER. Mx. Min.	THERMOMETER. Mx. Mn. Me.			Rural Sights and Sounds.
		h.m.	h.m.					
1	Tu	5 37	6 31	29.712...29.641	50...37...43.5	-36		Wild strawberries in flower
2	W	5 36	6 32	29.661...29.653	53...35...44.0	-37		Leafing season at its height
3	Th	5 33	6 34	29.709...29.663	55...34...45.0	-04		Stork's-bill & dove's-foot flwr.
4	F	5 32	6 36	29.767...29.709	57...30...43.5	-00		Globe flwr. & marigold
5	S	5 30	6 38	29.919...29.773	53...34...38.5	-00		Spring gentian flowers [flwr.
6	Su	5 28	6 39	30.192...30.063	51...37...44.0	-00		Violets flower
7	M	5 28	6 41	30.216...30.174	53...25...39.0	-00		Sandpipers and titlarks in
8	Tu	5 24	6 42	30.405...30.333	49...24...36.5	-00		Toothwort flowers [sights
9	W	5 22	6 44	30.490...29.475	50...23...36.5	-00		Glycine sinensis flowers
10	Th	5 19	6 46	30.500...30.391	55...23...38.5	-00		Wild cherry flowers
11	F	5 16	6 47	30.417...30.330	65...20...47.0	-00		Laburnum flowers
12	S	5 14	6 49	30.316...30.235	63...40...51.5	-00		Scolopendra electrica
13	Su	5 11	6 52	30.267...30.193	54...41...47.5	-00		Robinia pseudo acacia flowers
14	M	5 8	6 53	30.267...30.184	51...40...46.5	-00		Water ranunculus flowers
15	Tu	5 6	6 55	30.263...30.249	45...34...44.5	-00		Meadow saxifrage flowers
16	W	5 4	6 58	30.327...30.301	62...33...47.5	-00		Cuckoo sings
17	Th	5 2	6 57	30.313...30.218	60...40...50.0	-00		Deathwatch begins tapping
18	F	5 0	6 59	30.199...30.110	59...38...48.5	-00		Swallow begins to lay
19	S	4 58	7 1	30.170...30.146	55...29...42.0	-00		Earwig begins to lay
20	Su	4 56	7 1	30.230...30.096	54...29...37.0	-00		Stickwort flowers
21	M	4 53	7 4	29.909...29.822	56...24...40.0	-00		Chickweed flowers
22	Tu	4 51	7 6	29.887...29.773	58...39...47.5	-01		Wild pansy flowers }
23	W	4 49	7 7	29.954...29.815	55...25...40.0	-08		Box tree flowers
24	Th	4 47	7 9	29.919...29.963	64...40...53.0	-01		Blackcap sings
25	F	4 45	7 11	30.001...29.981	66...30...48.0	-00		Chestnut and hazel flowers
26	S	4 43	7 12	30.113...30.029	62...32...47.0	-03		Hornbeam flowers
27	Su	4 41	7 14	30.111...30.014	38...22...30.0	-54		Nightingale's first notes
28	M	4 39	7 16	30.090...30.004	54...26...40.0	-00		Ash tree flowers
29	T	4 38	7 17	30.178...30.123	53...23...38.0	-00		25 species of willow in flower
30	W	4 36	7 19	30.250...30.203	61...39...50.0	-00		Crabapple, pear, and common [plem flower

NOTES FOR THE GARDEN.

KITCHEN GARDEN.—Plant any potatoes that remain out of the ground, using whole sets, of a moderate size, rather than cut sets, or mere chits. Sow, in the open ground, sea-kale, rhubarb, asparagus, all kinds of cabbage, Scotch kale, Brussel's sprouts, etc.; radishes, onions, lettuce, broad beans, peas, turnips, carrots, small salad, French and runner beans, spinach, beet, parley, parsnips, American and Normandy cress. Sow, in heat, tomatoes, marrows, pumpkins, cucumbers, egg plants, cacciums, and celery; the latter will do in a warm border, if covered with a hand-glass. Make up a bed for the main supply of cucumbers, and either sow at once on the bed, or turn out plants of previous

sowings on to hillocks. For the culture of the cucumber in all seasons, see the FLORAL WORLD, No. 11. Weeding is an important task now, especially with regard to seed-beds. Use the hoe freely, and thin out wherever necessary, to prevent crowding, and spindling growths.

FRUIT GARDEN.—Trees that were unnailed may now be nailed in neatly. Use as few and as thin shreds as possible; allow room, in all cases, for the wood to swell, and put the nails right and left alternately, to give a neat appearance to the work. Nails for wall trees should be made hot in a shovel, and then thrown into oil; they will then stand the weather without rusting, and may be drawn out of the wood without hurting the

mortar with them. Any pruning not yet finished should be got over; and, though an injury to trees and bushes to cut them now, it is better than to leave them to grow into a crowded mass, to the exclusion of light and air, and the general deterioration of the produce.

FLOWER GARDEN.—This is a good time for planting most kinds of evergreens, and especially of American plants. Lifted with good balls, and well watered in dry weather, they will do almost as well if planted in autumn, and, for subjects of questionable hardiness, spring planting is to be preferred to autumn. Borders should be forked over, and dressed, if not done already. Herbaceous plants may still be got in, and sowings made for the present, and next season. Sow a succession of annuals, and sow tender kinds in heat. Get carnations and pinks into their blooming pots, and be careful not to injure the roots in shifting them. Auriculas must be sheltered from cutting east winds, and have plenty of room, to allow the air to circulate amongst them, or they will bloom weakly. Thin out the trusses to eight pipe each, and shade them from the sun

as they show colour. Break the surface of the soil fine about hyacinths and tulips.

GREENHOUSE AND STOVE.—Continue to propagate bedding stock; the plants from cuttings made this month will be late in blooming, but will not the less be useful for autumn decoration. Cuttings will bear a very brisk heat now, even as much as 80 degrees. Give liquid manure pretty freely to all greenhouse plants showing for bloom, and get as many things out of the house, into cold pits, as possible, especially autumn struck plants, for bedding out next month. Pot off, by regular shifts, all young stuff, and remember that an excess of root-room is almost as injurious as keeping them pot-bound. Train melons and cucumbers carefully, and stop as they reach the tops of their trellises. Keep the air moist about pines, and use sulphur fumes and syringings, if red spider makes its appearance. Average temperature of greenhouse, 55 degrees at night; 60 to 65 degrees by day. Temperature for stove collections, 65 degrees at night, 75 degrees by day. Beware of sudden bursts of sunshine and cold draughts,

TO CORRESPONDENTS.

CHAMÆLOPS HUMILIS.—*E. M. H.*—The three plants which have shot up a single leaf twelve inches high are evidently doing well. They are quite worth a place in a greenhouse, and may be put out on a lawn all summer. It is the hardest of all palms. You need not have plunged them in a hot-bed, as they will grow at their proper season. You will see in our last number how to deal with fern seeds; yours from Jamaica must be raised in stove-heat.

BASKET PLANTS.—*E. M. H.*—The following are the most showy and interesting—they will all bear the sun:—*Antirrhinum linariaefolia*; *Campanula Barleri*; *Convolvulus mauritanicus*; *Crassula procumbens*; *Disandra prostrata*; Ivy-leaved geranium, large white flowers, scarlet flowers, pink flowers, variegated leaves; *Linaria cymbalaria*; *L. alba*; *Lobelia speciosa*, and others; *Lycopodium denticulatum*; *Lysimachia nummularifolia*; *Mikania scandens*; *Nierembergia filicaulis*; *Petunia*, of sorts; *Polygonum complexum*; *Saxifraga sarmentosa*; *Sedum Sieboldi*; *Sibthorpia europæa*; *Tradescantia speciosa*; *T. zebrina argentea*; *Verbena Maconetti*; *Vinca elegantissima*, fol. variegata; variegated *Ivy*, *Hedera latifolia maculata*, a beautiful and distinct ivy; variegated-leaved Strawberry; *Calampella scaber* (*Ecromocarpus*); *Calystegia oculata*; *C. pubescens flore pleno*; *O. pubescens simplex*; *Cobaea scandens*; *C. foliis variegatis*; *Lophospermum Hendersoni* (*Cliftoni*); *L. purpurea*; *L. scandens* (*coccinea*); *L. spectabile*; *Maurandya alba*; *M. Barkleyana*; *M. kermesina*; *Passiflora corulea*; *Pyrostropermum acerifolium*; *Pylogine suavis*; *Rhodochiton volubilis*; *Lunbergia alba*, white; *T. aurantiaca*, orange; *T. alata*, buff; *Tropæolum canariense*; *T. elegans*, etc. etc.

DRUTZIA GRACILIS.—*J. E. C. S.*—Grow in a mixture of turf and loam equal parts, and one half part very rotten dung. They are sure to bloom well if the wood is ripened in the autumn, and that is easily accomplished by withholding water, and letting them have plenty of sun.

RHODODENDRONS IN POTS.—*Constant Reader.*—Give them plenty of water and keep them in the shade from this time, till they have set their buds for next year's bloom; then let

them have sun morning and evening, but be shaded from the midday heat; and keep only moderately moist. A little weak manure-water will benefit them while they are in full growth. As to repotting or turning out, that must depend upon their condition. If they want more pot room, one or the other must be done.

WALTONIAN CASE.—*E. H., N. Z., R. A. P.*—We really cannot reply to all the letters that reach us on this subject: we have given Mr. West's address over and over again; it is Jewry Street, Winchester. We have no correspondence with him, and never shall have again, for the simple reason that he once handed over a private letter of ours to another journal for publication. Former issues of this work abound in information on the subject, and we must refer our friends to the indexes of past volumes.

DAMP GREENHOUSE.—*S. J.*—A concrete of sand and Portland cement will prevent the rising of the water. It had best be done by a bricklayer. Coal-ashes are of no use in your case. Boiling water poured down next the woodwork is the best way of dealing with wood-lice. You may also trap them with boiled potatoes placed under flower-pots. A plank of damp wood laid down will sometimes collect them from all parts of the house, and they may be killed in hundreds every morning.

CLIMBERS UNDER TREES.—*J. W., Baywater.*—The Ayrshire roses are the only roses that will grow well under trees, and in a clay soil they are sure to do well. The finest climber for a porch is *Glycine sinensis*, otherwise known as *Wisteria sinensis*, which you can plant now if you obtain plants in pots. By taking out a barrowful of the clay, and filling the hole with a mixture of leaf-mould, loam, and old dung, they will make a good start, and afterwards root out into the clay, and do very well. As your place seems very unfavourable to vegetation, you can fall back on that old friend, the Virginian creeper, which will grow anywhere, and is unsurpassed for beauty.

COCKSCOMBS.—*J. W. E.*—Sow in a brisk heat, prick out as soon as large enough to handle, and then pot on, never allowing them to become pot-bound; soil sandy loam and very rotten dung; keep in hot-bed till the combs are nearly

full grown, and use manure-water pretty freely. Remove to greenhouse when combs are fully spread. Throw away any that are ill-shaped or badly coloured; you will soon be able to determine which will prove the best for keeping.

BOTANICAL TECHNOLOGY.—*D. Thomas.*—It would make a miserably dry book of the **FLORAL WORLD** to fill its pages with definitions of technical terms, all of which may be studied by the help of a Botanical Glossary and a Latin Dictionary. The latter, for instance, will tell you that *pulchella* means beautiful; *fulgens*, bright or shining; *gracilis*, slender, etc. Where specific names begin with a capital letter, the plants are named after persons or places—as *Drummondii*, in commemoration of Mr. Drummond; *Siberica*, from Siberia; *Chinensis*, from China, etc. It is not a subject for a periodical work.

ROSES DROPPING THEIR BLOOMS.—*J. Coleon.*—*Devoniensis* and others that are in a strong clay, and drop their blooms, will behave very differently if you temper the soil with a liberal admixture of turfy peat, leaf-mould, old dung, and sand. These ingredients, with yellow loam, all in equal proportions, make a first rate mixture for tea roses. Your soil is too cold and too heavy, and they show their indignation by casting their blooms. *Mathiola bicornis* is a crucifer, native of Greece (Don *Dichlamydeous Plants* I. 153, Smith, *Prod. Fl. Græc.* II. 26.) Leaves hoary, pinnatifid, siliques torulose, furnished at the tip with two acute horizontally-spreading spines, from which it takes its name. Flowers purple; grow the same as stocks in a light soil. It is the two-horned potted stock of gardens.

BOOKS AND CATALOGUES RECEIVED.—“*Cranston's Patent Buildings for Horticulture*” (J. Cranston, 1, Temple Row, West Birmingham).—“*A Handbook of Vine and Fruit-tree Culture*, as adapted to Sir Joseph Paxton's Patent Hothouses,” by S. Hereman (Bradbury and Evans). These are two most important works which all who contemplate building garden structures should consult. We shall devote a few pages to an examination of the contents of these works next month; for the present, we may safely say that none who invest a half-crown on the two will regret the purchase.—**FLORAL WORLD AND GARDEN GUIDE**, vol. iv. 1861. The volume for last year can be had in cloth gilt for 6s., and a better six shillings' worth of horticultural literature is not to be found. The set of four volumes would make a nice present to a friend, or to send abroad to the colonies as a picture of English gardening, and to stimulate horticultural enterprise afar off. Local flower shows might do some good for their members by a purchase of these volumes for circulation amongst them.—“*Sutton's Spring Catalogue and Amateur's Guide for 1862*,” contains, as usual, an immense amount of useful information. With this book before him, no amateur can go wrong in the cultivation of any class of vegetables and flowers. Like the rest of the trade, Messrs. Sutton have added a very full list of gladioli.—“*Sutton's Farm Seed List, 1862*, with Instructions on the Cultivation of Root Crops and the Management of Grass Lands.” The list contains every requisite for farm purposes, and is especially valuable for the lists of grasses, for permanent pastures, water meadows, parks, etc.—“*Catalogue of New Roses, Hollyhocks, Gladioli, Pelargoniums, etc.*” (William Paul, Waltham Cross, Middlesex, N.). Mr. Paul has entered with great spirit into his new undertaking. This catalogue comprises all the new roses of continental production, all of which will be bloomed

at this nursery during the forthcoming season. The list of hollyhocks is the next in merit and interest.—“*Hooper and Co.'s Spring Catalogue, 1862*” (Hooper, Covent Garden). The whole of the subjects are arranged alphabetically, and in separate columns, the botanical class, native country, habit, height, colour, etc., are described. It is a carefully prepared catalogue, and may be consulted with confidence.—“*Verschaaffelt's Price Current*” (Verschaaffelt, Ghent). The spring list of this eminent house is a very interesting one, and will be of great service to growers of orchids, palms, and other ornamental stove plants. The collection of camellias is known to be one of the best in Europe.—“*Henderson and Sons' Catalogue of Seeds, 1862*” (Henderson and Sons, Wellington Road, St. John's Wood). A very bulky list, contains every useful subject that can be required for the flower garden, greenhouse, kitchen plot, or farm.—“*Chater's List of Hollyhocks*” (Chater, Saffron Walden). There are some extra fine flowers entered among the novelties, and the general stock is select and good.—“*Catalogue of Flower, Vegetable, and Agricultural Seeds, 1862*” (B. S. Williams, Paradise Nursery, Holloway). A good list, containing every requisite, and the subjects so arranged that there is no difficulty in finding any of them. The orthography might be improved.—“*Catalogue of Cuttings for the Spring of 1862*” (John Morse, Dursley, Gloucestershire). Mr. Morse has for many years supplied cuttings of choice varieties to enable amateurs to propagate stock for themselves, without the expense of obtaining plants or seeds of all the varieties they require. This catalogue comprises the names of dahlias, fuchsias, geraniums, achimenes, chrysanthemums, calceolarias, etc., of which Mr. Morse can supply cuttings at prices ranging from twopence to sixpence each.—“*Old Jonathan*.” This illustrated broad sheet improves every month. The last number contains a spirited sketch of the dangers of mining in connection with the Hartley catastrophe. It is the best work of the kind for village distribution.—“*Descriptive Catalogue of Dahlias*” (George Rawlings, 21, Globe Road, Bethnal Green). On one sheet of foolscap Mr. Rawlings has arranged all the best new and old dahlias, with faithful descriptions; and in a spirit of thorough fairness has given no prominence to his own seedlings above those of other growers.—“*Catalogue of Dahlias, Phloxes, Fuchsias, Pæonies, Chrysanthemums, Daisies, and Variegated-leaved Plants*” (John Salter, William Street, Hammersmith). Invaluable, and peculiarly interesting.—“*Descriptive Catalogue of Evergreens, Deciduous Trees, American, Climbing, and Herbaceous Plants*” (William Paul, nursery, Waltham Cross). There are among the herbaceous plants many old friends which we never expected to see in a catalogue again; and we are glad that Mr. Paul has found time to consider their merits among the greater anxieties of growing roses and conifers.—“*Descriptive Catalogue of Florists' Flowers, etc.*” (Downie, Laird, and Laing, 17, Frederick St., Edinburgh, and Stanstead Park, Forest Hill, London). This is especially valuable for the list of pansies, of which Messrs. Downie and Co. send out a great many new ones this spring. The other subjects in the list are pelargoniums, calceolarias, cinerarias, dahlias, Belgian daisies, hollyhocks, chrysanthemums, petunias, phloxes, etc. The most interesting after the pansies are the lists of hollyhocks and chrysanthemums, of which there are several fine varieties offered, which we have described in former pages of this Magazine.

BURRO WALK.

's against

our rule to recommend dealers, we must in this case refer you to the only man we know who makes rustic-work as it should be made to satisfy a cultivated taste, and endure wear and tear for many years. As you do not send your address, we may suppose it possible for you to visit the rustic wood-yard of Mr. Curry, Brook St., Stoke Newington Common, London, N., where there is just now such a stock of arbours, yew tables, oak baskets, etc. etc., as would drive the lovers of rustic furniture crazy with delight. If you cannot visit the place, write and order what you want; and if you state the size and something like the proportions of the baskets, etc., required, they will be sent by rail safely packed, and their arrival will be one of the happiest days of your life. Your other query is answered in an article.

FERNS FOR COVER.—*Benham, Newbury.*—The reason why ferns do not grow in your covers is probably that the soil does not suit them, and this is the more likely as they grow "admirably two or three inclosures off." The best fern for your purpose is the common brake, which will grow in almost any soil, but most freely in a damp peaty earth. It has been said in books that the brake cannot be easily propagated, but we have been overrun with it through the introduction of pieces of the roots to the garden in bog earth from Wanstead. As the bog is always chopped to the size of potatoes when used, it is evident that moderate-sized pieces of the brake roots will grow. If we had to manage your coppice, we should select a certain few favourable positions, and open circular trenches, from which we would remove the earth to a depth of eighteen inches and a breadth of three feet. Those trenches we would fill with a mixture of surface parings of turf, charred rubbish, moss, rotten wood, and any other peaty material we could lay hands on. A few loads would go a great way, as a portion of the soil taken out could be mixed with it if loamy. Plant these belts with *Pteris aquilina*, *Lastrea filix-mas*, *Polystichum angulare*, *Athyrium filix-femina*, and *Scopolopendrium vulgare*. The first is the most important, as it is real game cover, and will grow almost anywhere. If you cannot get a supply of plants in your own neighbourhood, a nurseryman will supply you by the hundred or thousand. Do the work at once, and finish it off before the season advances towards summer.

NOTES FROM TORQUAY.—In the list of plants given as suitable for town greenhouses, I see *Metrosideros*, or bottle-brush, named. Is this the same as the *Beaufortia splendens*? I have just received some seeds of melons and gourds from Australia, and send you a few, with the remarks of them sent by my friend. I dare say they are nothing important. He also sends me over some balsam seeds; and he adds, "the balsams have become so acclimatized that we grow them in the borders, and they attain a large size, both in plant and blossom." I have a Cloth of Gold rose in front (outside) of my conservatory, and it every year makes one or two good long shoots, but it has never blossomed. It is in a very warm spot; can you suggest anything to be done? I saw the tuberous growing out of doors here (Torquay) last autumn to a great size, with fine bloom. *Erythrina crista-galli*—I have lost all my plants from the 1860-61 winter, after being out several years. The most admired plant I have in the conservatory is the *Habrothamnus*. It is in the border, and has grown up a pillar, and since June last has been one mass of bloom, a perfect picture. It grows to the top of the house, and sends out branches and shoots six or more feet long, covered with a continual

succession of coral blooms, which have to be cut off at passing away, and then the side-shoots throw out and bloom. I am now cutting back some of the longest branches to get the plant again into shape; it strikes easily, and has no faults as I have discovered. On examining my pear-trees, I find eight buds out of ten entirely gone, and my gardener says it is the blackcap or tomtit that eats them. What must I do?—*A. B. S., Torquay.* [*Beaufortia* and *Metrosideros* belong to two different sections of *Myrtaceae*, and the best remembered distinction is that *Beaufortia* belongs to *Polyadelphia polyandria*, and *Metrosideros* to *Icosandria monogynia* of the Linnean system. In the first the calyx is turbinate and the limb five-parted, and the stamens are in five bundles; in the second the limb is six-parted, stamens twenty to thirty, full, very large, and exserted. Strictly these cannot be classed until we know all about their fruits, while we do not think they are distinct enough as subjects of culture. The rose will bloom when it gets older. There are no black-caps yet in the country. You will probably have a good crop in spite of the marauders; we have known trees to appear stripped, yet bear well.]

WALTONIAN CASE.—*Polly.*—We have written so much on this subject, that we really must not occupy much space with it now. Possessors of cases should take down past volumes, and read over the various hints and advices, and from them compile a few notes for their own guidance; and if such a course is pursued, it will be found that we have already treated of all the points that admit of explanation. We cannot do more, the cultivator must acquire experience by practice and observation. The immense number of letters that reach us on this subject will, however, justify us in supplementing previous papers with a few condensed instructions. *How to manage it:*—The flame of oil-lamp, gas, or candle should be as near the under-side of the boiler as possible, without causing a deposit of soot; a distance of a quarter of an inch is generally sufficient. If the heat is deficient, empty and refill with boiling water twice a-day, and in the process of filling allow a little water to flow over on to the sand, sufficient to keep it just moist. Place the thermometer at the back, beside the smoke-pipe, with the bulb pressed down in the sand. If it registers 70° there, the more distant parts of the tray will be above 60°. Subjects that require the highest temperature place in the centre; if they have heat enough, those more distant will be safe also. To maintain a heat of 75° or 80°, keep the glasses down close, fill with boiling water twice a-day; keep the case where the sun will shine on it, and cover the glasses with a piece of stout calico or other kind of shading. This plan answers well to get up stove seeds, and for cuttings of succulents and geraniums; but there must be very little free moisture in the case, or the cuttings will rot. To keep one side warm and the other cool, let one glass remain close and draw the other over the centre, so as to admit air only at the other end. If the cuttings are mixed, place bell-glasses over those that will bear to be kept moist and close, which nearly all kinds will when first put in; this will allow of others that are rooted to have air by the partial removal of one of the lights. *Petunias*, *verbenas*, *heliotropes*, *lobelias*, *fuchsias*, and all soft-wooded greenhouse plants, except geraniums, will root quickly if cuttings are taken from plants in free growth, and inserted in sand and water. The simplest method is to use pans or saucers two inches deep; put in one inch of silver-sand, and fill up to the edge with water; then insert the cut-

tings, so that they will hold up with their lower ends touching the bottom of the saucer. Place these in the centre, and keep the glass over, and maintain the heat at 70°. Geranium cuttings put in pure sand or half sand and half fine loam, the pots or pans well drained, and the soil kept only moderately moist; temperature 65° to 75°. If seeds are put in with cuttings, lay squares of glass over to prevent evaporation till the seeds have sprouted; then remove the glasses, and place inverted pots under the seed-pans to lift them up to the light; give air a little at first, and at last lift them out before the seedlings run up and become attenuated. Best not to mix things together, but amateurs can hardly help it; when the subjects are all of one kind, the management is much more simple. The square seed-pans sold by Adams and Co., Belle Isle, London, N., increase the available space one-third, as they fit close together and are admirable for seeds. Best to trim the lamp last thing at night, first thing in the morning, and at noonday, as the flame sometimes gets weak after six or seven hours. Tray to be filled with silver-sand or soft red sand to the rim. If signs of mildew, let the sand go almost dry; give air by drawing both glasses over the centre; keep up the heat to 75° at least. If in greenhouse, keep one end of the house warm and close for the newly-rooted cuttings as they are removed from the case. Beginners fail through attempting too much. Melons and cucumbers, seeds, cuttings of fuchsias, fairy roses, *Solanum capsicastrum*, verbenas, petunias, lobelias (seed or cuttings), mimulas, variegated mint, heliotropes, and short joints of calceolarias are the easiest practice. Take cuttings when the young shoots are about three inches long; never attempt to root old wood; remove the cuttings from fuchsias and calceolarias by a touch with the thumb, so as to snap them off "with a heel," that is, with a thickened base; otherwise cut them off close to the joint they start from; trim off only as many leaves as will leave a sufficient space bare for insertion; never attempt to root large cuttings until you have had much practice in propagating. Sow seeds in fine rich mould. Small seeds barely cover with a sprinkle of fine earth (not sand); seeds as large as convolvulus cover a quarter of an inch; seeds as large as melons one inch. In potting off, best to have pots and soil warmed; if that is not convenient, be careful not to chill the plants. Use light rich mould, and have a separate mixture extra sandy to place round the young roots. A mixture of turf or peat, leaf-mould, loam, very rotten dung, and silver-sand equal parts, well broken and blended, will do for every kind of young plants from seeds and cuttings; put one-third of crocks in the pots for drainage, and replace them in the case as soon as possible; shut close, and keep up the heat to 70° or 75° for a few days; then give air. If the soil is moderately moist when they are potted, a light sprinkle over the leaves will suffice till the pots are nearly dry; then water with the tepid water drawn from the boiler, refill the case with boiling water, put the glasses half on, cover with shade if the sun shines on it, and towards evening shut down close. Next day sprinkle only, and take care neither leaves nor roots are made very wet. If oil is used, have two lamps; one can be cleaned and trimmed at leisure ready for use, and the plants need not be chilled if there is any trouble with the lamp. Never have too long or too open a wick; you want a clean, steady flame, and no blacks.

HOOLY IN NEED OF PRUNING.—*B. J.*—Your variegated holly, unpruned for several years, and

now getting open and naked, should be pruned at once, and it will require considerable care. Take a survey of the tree, so as to have in your mind exactly the sort of form you would wish it to grow to; first cut in every branch that extends beyond the general circumference, and use a small sharp saw and the best knife you have. In cutting back these ramblers, take them off, if possible, *above* a fork, thus—*V*. By leaving two short snags of about an inch beyond the fork, you will get three breaks at least. In places where there are large openings between the branches, cut back the branches on each side about half their length, and let every cut be just above a bud or fork, as the holly always has dormant buds at the base of a fork. This plan will punish the tree least of any, and will be best if the position of the tree is such that you cannot afford to have it look like a scarecrow for a month; but a more effectual mode would be to cut every one of the branches back to about two feet from the main stem, so as to form a symmetrical skeleton of regular outline tapering to the top. The hard wood must be cut with a fine saw, and every cut be smoothed over with a knife. If you can paint all the wounds with collodion, they will heal the sooner; but an established tree soon gets over its trouble at this time of year. After pruning, syringe the tree frequently during dry weather, not morning and evening only, but any time whenever you can spare five minutes; but do not water the root at all. All the back numbers of the *FLORAL WORLD* may be had through the booksellers.

GOOSEBERRY CATERPILLAR.—*B. H. M.*—We strongly object to the use of hellebore to stop the gooseberry caterpillar, as it is a poisonous substance, and any remaining on the berries might prove dangerous if they happened to be gathered for use before the rain had washed it off. A dressing of the ground under the trees with tan is much more effectual; the tan to be raked off and burnt after it has lain under the trees a week. But for these and most other pests of the grub class, hand picking is the best process of eradication; and it is astonishing how much may be done in a brief space of time, when, instead of thinking what an awful job it is, it be set about instantaneously, and persevered in till completed. In Jones's "Gardeners' Receipt Book," a liquor is recommended to be made thus—Boil elder leaves in as much water as will cover them till the liquor becomes black; then clear and cool it, and to every gallon add one gallon of tobacco-water. When the trees are quite dry, drench them through the rose of a watering-pot, and in ten minutes the caterpillars will fall off.

DOUBLE-GLAZED PIT.—*J. W., Bath.*—The angle of the frame in your sketch is right, and the height, back and front, are consequently right also; but a frame six feet wide is a very awkward affair to manage, and requires considerable space each way for the play of the lights. Frames of this width are to be seen everywhere, but they are clumsy things in private gardens, unless the lights are divided so as fall each way thus:—

If you double glaze, you will vastly increase the power of resisting frost; but as frames are so easily covered it is hardly worth while to bear the expense and trouble. We should advise you to make, instead, some coverings of the kind described by Mr. Howlett, page 12 of the second volume of the *FLORAL WORLD*. Double glazing is a matter for the consideration of experimental growers and horticultural builders.

NEAPOLITAN VIOLETS.—*THE LILIES OF THE VALLEY.*—*These plants have been kept them grow-*

ing too late in the autumn, or, as the winter has been a mild one, they have perhaps grown out of bloom into leaf for want of a check. A nurseryman near us grows an immense number for market, and has to furnish a large mass of them in flower for an annual festival. He grows them precisely as recommended in the paper which appeared in the *FLORAL WORLD* in March, 1861. After they are potted in September they are watered and shut up rather close for a fortnight; they are then aired, and after that have no care at all until taken out of the frames to force. We imagine yours are the worse for too much kindness. Lily of the Valley ought not to be grown in pots more than one season. Take them up when just breaking through the ground, pick out the plumpest bulbs and pot them; replant all the weak ones. If these grow in a border that suits them, a quantity of flowering bulbs may be taken up every year. Those sent to Covent Garden are all potted from old borders.

CYCLAMENS, ANNUALS FOR THE NORTH.—*M. M. S.*

—When done flowering, put them out of doors and give no water. When the seeds are ripe and the leaves withered, lay them on their sides till September, then shake them out and repot and place in the greenhouse, with very little water till they are growing freely. By referring back you will find abundant information on the subject. The best annuals for a cold clay, near Newcastle, are any of the showy Californian kinds sown in pans in a pit or frame, or on a gentle hot-bed, and planted out when the ground is warm. All those specified in last month's article as good for clumps and borders, will suit your unfavourable climate if grown during their first stage under glass. If you grow *Oxalis* roses, *Hunnemannia*, *Nemophila maculata*, *Leptosiphon*, or *Fenzlia dianthiflora*, or *Ipomoea*, get them out forward in pans, and do not plant them out till May. Give preference to the crimson, purple, and white candytufts, *Nemophila insignis*, *Campanula speculum*, *Venus's Navel-wort*, *Silene armeria*, *Kaulfussia amelloides*, *Viscaria oculata*, *Gilia rosea*, *Escholtzia crocea*, and peony poppy, and others that we have described as suitable for autumn sowing, as they are the hardiest.

SPERMATOPHYTES.—*W. L. G.*—This is a moss which abounds in most boggy places, and generally grows in spots where it is covered with about two inches of water all winter, in sappy unsafe ground. There are a few spots on Hampstead Heath where we can always obtain a supply, and that is the nearest spot we know for it near London. It is a gray moss, of coarse texture, very distinct in character, and when bitten between the teeth yields a bitter taste. It is useful for a hundred different purposes in horticulture, and is largely used by nurserymen to pack plants in, as it retains a certain amount of moisture when dry to the touch, and is so astringent that it prevents decay of the plants packed in it. You can obtain fern spores of the first-class seedsmen; any who advertise in this work will supply you.

PLANTS FOR WALL OF GREENHOUSE.—*C. E. C. T.*

—The north-west end of a cool house is just the place for a hundred different hard-wooded plants, interesting both winter and summer. If you have a border there with eighteen inches of soil, rich sandy loam and turfy peat, equal parts, you might cover the wall with *camellias*, *Magnolia grandiflora*, *Stauntonia latifolia*, or any of the shrubs recommended to H. M. G.

MYRTLE FENCES.—*E. Forsyth.*—At first thought, it seems as if a myrtle fence would be best adapted for gardening in Italy or in the moon; but on a second thought the thing assumes a

feasible shape, and we remember to have once done something like it. Our freak was to have a row of dwarf myrtles as the front line of a belt of shrubs, and we propagated plants for the purpose, planted them out on nice rich soil, and took them up every autumn and kept them in pots all winter. We have one of the identical plants now, an old stump which was left out with dozens of others of the same lot, and the only one that escaped the winter of 1860-61. It is quite a wonder that, in our papers on evergreen shrubs, we did not go into the subject at length. You can do it certainly for a division line of four or five feet high. Treat them as bedding plants; prune them sufficient to keep them close and regular; give plenty of water all summer; take up in October, and pack their roots in sand, or pot them, and plant out again at the end of April. *M. communis* is the only myrtle fit for the purpose.

VARIOUS.—*J. E.*—Much obliged for the seeds, which we have divided and despatched to the correspondents who applied for them. The finest of the grasses is probably *Aira canescens*, the coarser probably *Aira praecox*. You know how unsatisfactory it is to name plants from imperfect specimens, especially ferns and grasses.—*Brentingby.*—*Narcissus exigentia*, which your friend is anxious to obtain, we can find no tidings of, either in Sweet's *Hortus Britannicus*, Don's Catalogue, or any of the more generally used books of reference. Can any reader oblige our correspondent with information concerning it? we imagine it to be one of the extinguished *Hippeastrums*, which, with other good things, has been trodden out by the overpowering pace of the bedding system. Your *fuchsia* curls its leaves because the weather is cold; it will be all right in a week or two, when we have a little more sunshine.—*H. M. G.*—*Myrtles*, *Veronica Lindleyana*, *Ceanothus papillosus*, *Metrosideros capitatus*, *Habrothamnus fasciculatus*, will be good subjects for your little unheated house on a south wall. The last will require shade when in bloom, and as it blooms on last year's wood, must not be pruned after flowering. Other suitable subjects may be discovered in plenty by reference to past issues of the *FLORAL WORLD*.—*W. F.*—We are very sensible of your kindness, but unless the lists were sent from the houses direct, we could not notice them. Such of the trade who can do without the publicity of the *FLORAL WORLD* may enjoy their independence, the better for those who know the value of publicity among some seven thousand readers.—*W. W. F.*—A handful of quicklime thrown into a tub of well water will soften it by the time it has settled clear. Try what a few drops of hartshorn will do. We have nothing but hard well water for our greenhouse plants, and we have it pumped up in advance of use to be exposed for some time, and it modifies itself under the action of that mighty rectifier—the atmosphere.

* * We cannot guarantee replies by post in any case. Our garden is not open to visitors, nor have we time to accept the numerous invitations sent us to visit the gardens of friends. We are greatly obliged for numerous packets of seeds sent; but we do not undertake, in any case, to grow them. Numerous letters reach us every month after the Number is printed. We are most anxious to oblige, and we hope none will think that non-reply means inattention, as we attend to every letter that arrives before the 20th, and most carefully to those that come earlier.

WALTONIAN.—We are informed that Messrs. Hooper, of Covent Garden, supply mortars for the Waltonian at 2s. per box of 10.

THE
FLORAL WORLD
AND
GARDEN GUIDE.

MAY, 1862.



CAMELLIAS have bloomed superbly this season, and a few very promising new varieties have been introduced. The collections we have visited which are most deserving of mention, were those of Messrs. Henderson, Pine Apple Place, Edgeware Road, Messrs. Milne, Wandsworth Road, and Mr. W. Paul, Waltham Cross. The Messrs. Milne, as usual, generously threw open their camellia house to the public, and there were thousands of visitors, while the exhibition lasted. The old trees of Corallina and Chandleri there were one mass of bloom. *Eximia* on the back wall was extra fine, the colour almost scarlet, and the variety is very free in growth. A large tree of *Chandleri elegans*, which has towered up to the roof, and threatens to lift up the glass, was smothered with finely-formed flowers of a rich rose colour, and *Marchioness of Exeter* and *Donckelaari*, were as good as ever for brightness of colour, and deep green foliage. We were privileged also to see a few of the new ones just in the proper state to judge their merits. One of these is a decided beat on *Princess Frederick William*, and perhaps the finest camellia yet raised. It is called *Amæna*, and is well named. The petals are beautifully smooth, carnation striped, the flower very double, and the habit of the plant excellent. The other is *Punicea*, the flowers large, double to the centre, the petals firm and smooth, evenly cupped, and of the richest crimson; so rich and bright that some of the good old reds look like brickdust beside it; the foliage a rich deep green, and broadly oval. As a classification is of special value for reference, we add here a list of the varieties which we marked down as the best in the several collections:—

NEW CAMELLIAS.—*Adelina Benvenuti*, white, blotched with rose, large and handsome; *Annette Frauchetti*, rose, finely imbricated, with a stripe of white down the centre of each petal; *Belle Jeannette*, very large, velvety rose, striped and spotted with white; *Beali Palmen*, rich warm crimson, exquisite shape; *Bella di Pontedera*, bright rose, striped with white, very fine; *Bonomiana*, fine large white, with double stripes of red, very uncommon, and ought to be in every collection; *Casila*, white shaded with red, very pretty, good shape, and one of the best; *Celliformis*, rosy pink, finely imbricated flower, good shape; *Columba*, bright rose, very large, finely imbricated; *Compacta alba*, white, very large, smooth petals, very free bloomer, and

rior to any of the old double whites ; Countess of Derby, creamy white, with a large rose stripe down the centre of each petal ; very regular extra large size, very handsome ; Cup of Beauty, pure white, delicately streaked with pink, a large and finely-shaped flower ; Duchess of Buccleugh, bright carmine, with a stripe of white ; Egeria Humbert, brilliant rose, centre petals clearly veined, very beautifully imbricated ; General Lafayette, splendid crimson, large and good shape ; Gigantea, bright rose, good shape, great substance, and an immense flower, larger than Marchioness of Exeter ; Guglielma Ottolini, bright cerise, striped with white, imbricated ; Kossuth, bright scarlet, very full and admirably formed ; Mathotiana Alba, new white, very large, extra, fine shape, good foliage ; Pearl, snowy white, fine form, petals of great substance, beautifully imbricated ; Princess Frederick William, carnation striped, fine imbricated form ; Regina del Gigantea, red, enormous flowers, very showy, resembling Reticulata in size ; Saccoi Nova Vera, rosy pink, very double, resembling a fine rose ; Trackir, a splendid variety from Florence, the outer petals bright rose, and of a lighter colour in the centre, free bloomer, very large ; the plant is of a compact habit, and the foliage of a beautiful green ; Valtevarado, bright rose, beautifully formed, one of the very best ; Wilden, rose, fine shape, free bloomer, good foliage, one of the best.

OLD AND CHEAP CAMELLIAS.—*White*: Alba plena, the old double white, one of the very best ; Alba penetrata, white, finely imbricated ; Alba semiduplex, large and very handsome, semi-double, white, with showy anthers, an old and scarce variety ; Candidissima, white, large ; Fimbriata, pure white, fine form, and every petal beautifully fringed ; Ochroleuca, yellowish-white ; Virgine de Collebeate, white, with double rows of petals, the only camellia in cultivation of this form. *Striped*: Albertus (Chandler), carnation striped, one of the best of its class ; Benny de Boul, carmine striped and tipped, finely imbricated ; Catherine Longhi, rosy-carmine, with white stripe down each petal, fine showy flower and good form ; Countess of Ellesmere, creamy white, delicately striped, large and very fine shape ; Countess of Orkney, white, striped carmine, extra fine ; De la Reine, snowy white, very delicately mottled and striped with rose, extra fine form ; Double Striped, or Variegata, crimson, mottled white, blooms early ; Imbricata alba, white, striped and blotched with rose ; Jenny Lind, white, striped with delicate rose, very compact and free bloomer ; Jubilee, fine blush-white ground, with delicate rosy-pink stripes and markings, very good form ; Princesse Bacchiocchi, rich carmine, striped with white ; Teutonia, rosy-pink, shaded and striped with white, sometimes produces flowers pure white, a very pretty variety ; Tricolor, semi-double, rosy-blush ground colour, with bright scarlet markings, very showy ; Targioni, white, striped with carmine.

Blush.—Adelaide, creamy blush, flaked and blotched with pink, very pretty ; Alexina, blush, very delicately marked with rose, exceedingly pretty ; Americana, blush-white, with rosy picotee-like markings ; Lady Hume's Blush (or Incarnata), beautiful creamy blush, very distinct, and everybody's favourite.

Carmine and Rose.—Archiduchesse Augusta, deep rose ground, shaded and veined with purple, a very singular variety ; Archiducea Giovanni, scarlet, with bright rosy centre petals, striped white ; Augusta Delfosse, velvety carmine, hexagonal shape ; Beali rosea, bright rose, small oval petals, finely formed, very beautiful ; Bruceana, deep rosy-crimson, very large ; Chandleri, brilliant crimson-red, sometimes beautifully mottled with white ; Colletti, deep red, covered with large white blotches ; Corallina (Chandler), brilliant crimson-red, large and very handsome ; Donckelaari, red, mottled with white, large semi-double flower, very showy ; Elegans (Chandler), splendid rose, occasionally beautifully mottled with white, an extra large and very handsome flower ; Formosa (Chandler), beautiful soft velvety rose, fine petal, excellent shape, and large flower, quite distinct from anything else, splendid foliage, and altogether one of the handsomest in cultivation ; Gem, bright carmine, with light pink centre, very large, great substance of petals, finely imbricated, expressively named, for it is truly a gem ; Hendersoni, shaded rose, imbricated, very pretty, and distinct form ; Imbricata, rich carmine, smooth waxy petal, occasionally very finely mottled with white, one of the best ; Lady Mary Labouchere, fine rosy-purple, good foliage ; Marchioness of Exeter, clear rose, large, and very handsome ; Mathotiana, rich crimson, very large, and extra fine shape, one of the handsomest and best ; Montironi, white, beautiful shape ; Optima, rosy-crimson, shaded with white, a magnificent flower ; Pictorum roseum, rose, centre petals tipped with white, large, and good form ; Queen Victoria, outer petals bright crimson, inner petals delicate rose, with white stripes, finely cupped flower ; Reine des Fleurs, rich orange-scarlet, very finely imbricated, a splendid variety ; Saccoi, very

beautiful pale rose, perfect shape, one of the very best. This variety is known under several other names, and among them *Halfida*, *Saccoi nova*, *Alphedi*, *Rosea nova*, and *Augustina superba*; *Story*, bright rosy-pink, good shape, and bold handsome flower; *Washington*, scarlet, very bright, large, good petals, and regular; *Zavonia*, bright crimson, finely shaded, a beautiful and distinct variety.

"AZALEAS.—The twelve for which Mr. Turner was awarded the first prize at the second show of the Royal Horticultural Society, were beautiful plants, nicely balanced as to size and shape, and admirably put up. They consisted of *Bride*, *Duchesse* and *Duc de Nassau*, *Variegata*, *Marie*, *Gledstanesi*, *Constantia rosea*, *Eulalie*, *Gem*, *Adolphe*, and *Grand Monarque*. Messrs. Ivory, of Dorking, whose plants were models of culture, exhibited *Flower of the Day*, white, occasionally striped with red; *Criterion*, *Lord Raglan*, *Ardens*, *Vittata*, *Glory of Sunning Hill*, *Alba Illustrata*, *Marie*, *Bouquet de Flore*, *Amœna*, *General Williams*, and *Alba cinota*. Messrs. Fraser, of Lea Bridge, had *Roi Leopold*, *Magnifica*, a semi-double sort; *Rosy Circle*, *Aurora*, *Criterion*, *Amœna*, *Louise Margottin*, *Trotteriana*, *Double White*, *Mrs. Trip*, *Barclayana*, and *Flora*. Of groups of nine, Mr. Todman, gardener to R. Hudson, Esq., Clapham, sent *Coronation*, *Eulalie*, *Princess Royal*, *Concinna*, *Optima*, *Iveryana*, *Amœna*, *Dr. Livingstone*, and *Bride*. Mr. Blog, gardener to S. Gassiot, Esq., Clapham, sent *Glory of Sunning Hill*, *Iveryana*, *Rosea*, *Magnifica*, *Broughtoni*, *Semi-double Purple*, *Coronata*, and *Magnificent*. Mr. Higgs, gardener to Mrs. Barchard, Putney Heath, sent *Duke of Devonshire*, *Louise Margottin*, *Duke of Wellington*, *Magnificent*, *Trotteriana*, and *Bride*. Among the new Azaleas, *Duchesse de Nassau* made a conspicuous figure; the flowers are large, colour warm salmon, with a dash of violet in the upper petals. *Model*, a large rosy-pink, is not very distinct from kinds of the same class of colour already in circulation. *Distinction*, pale salmon, edged with white, is a fine variety; and *Dr. Livingstone*, rosy-pink, is a real advance in form. Messrs. Veitch had some well-grown standard azaleas, a form now becoming fashionable, and certainly well adapted both to get rid of the tendency of azaleas to become leggy and to show off their flowers to advantage in large conservatories. Among the varieties were—*Etendard de Flandres*, white, occasionally striped with crimson; *Etoile de Gand*, salmon, broadly edged with white; *Rubens*, glowing rosy-salmon; *Consolation*, pink; *Hortense Vervaene*, *Herzog Adolphe von Nassau*, crimson; and *Bride*, a good white. Messrs. Smith had *Duc d'Arenberg*.

RHODODENDRONS.—The prettiest *Rhododendron* at the Royal Horticultural was from Mr. Young, gardener to R. Barclay, Esq.; it is called *Nereus*, the flowers small, violet, black blotched; quite a novelty for conservatory purposes. Mr. Bousie, of Stoke Park, showed an improved *Ciliatum*, called *M'Nabianum*, the flowers larger and of the same pale rosy hue as *Ciliatum*. We remember a large flowering variety of *Ciliatum* exhibited by Mr. Turner three years since, and this appeared to be identical with it, so that we suppose it to be the same re-named. Messrs. Veitch had a beautiful plant of *Gibsoni*; and G. Luscombe, Esq. of Kingsridge, Devon, sent cut flowers of *R. arboreum* and *cinnamomeum*, bloomed in the open air. At Mr. Mongredien's garden, Forest Hill, *Rhododendron Nuttalli* has bloomed superbly. It is one of the giants of the Sikkim race, and probably a parasite when growing among its native hills. It is here in a cool house with other Ericaceous plants, and has been the chief attraction for its grandeur as a specimen, and the magnificent development

of its flowers. It differs considerably in its general aspects from its compeers; its huge leaves are of a lighter shade of green than most other rhododendrons, they are slightly tomentose, when young have a ferruginous stain on the under side, and as they attain their full size they hang down in whorls at regular distances upon the stem. The specimen before us is about six feet high, in a fifteen-inch pot, and has about twenty expanded flowers which are individually finer than any other rhododendron known, and the species might have been correctly named giganteum. Those on Mr. Mongredien's plant were however smaller than the published figures and descriptions. They are somewhat convolvulus-shaped, the lower limb projecting slightly forward, the tube measuring four inches in length, and the breadth of the flower across the face about five inches. They are produced in terminal corymbs of about half-a-dozen flowers each, the colour lily-white, with orange throat, the pistils and stamens projecting forward boldly adding to the distinctive character of the flower. For a good general list of Azaleas, see FLORAL WORLD, Vol. iii., page 8.

AURICULAS.—The first prize at the Royal Horticultural was awarded to the Rev. H. Dombrain, for Maclean's Unique, Othella, Ne Plus Ultra, Page's Champion, Oliver's Lovely Ann, and Hudson's Apollo. From Mr. James came Bright Phoebus, Morning Star, Royal Purple, Duke of Wellington, Mary Gray, and Waterloo. Mr. Holland, Hounslow, sent Mrs. Curran, Orion, May Queen, Negro, Viola, and Circle. From Mr. Turner were good examples of Page's Champion, Ann Smith, Mrs. Smith, Fletcher's Mary Ann, Taylor's Glory, Netherwood's Othello, Dickson's Duke of Wellington, Spalding's Mary Gray, and Turner's Ensign. Messrs. Dobson showed Glory, Prince of Wales, Uncle Tom, Brutus, Privateer, Lovely Ann, Fair Maid, Apollo, and Waterloo. Mr. Holland showed a dove-coloured seedling, with a white eye, called Mrs. Eyles.

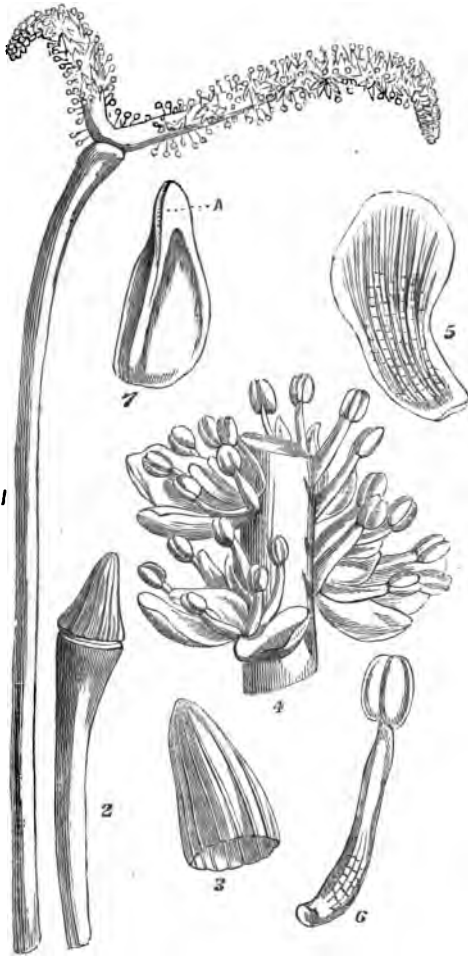
CINERARIAS.—The best at the Royal Horticultural came from Messrs. Dobson and Son, who contributed well-grown plants of Captain Schrieber, Master F. Watson, Louisa Pyne, Brilliant, Perfection, Hyperion, Mrs. Hoyle, Lady Seymour, and Mr. Marnock. From Mr. Turner came Queen Victoria, Adam Bede, Mrs. Hoyle, Eton Boy, Miss Franklin, Brilliant, Perfection, Reynold's Hole, and Regulator. Mr. Lamb, gardener to Miss Thackthwaite, Norwood Green, Southall, sent well-flowered plants of Mr. Watson, Perfection, Prince of Wales, Mrs. Hoyle, Beauty, and Modesta. Mr. James, gardener to W. F. Watson, Esq., Isleworth, contributed Sarah, Lord Raglan, Lord Elgin, Perfection, Constancy, and Conqueror. From Mr. Wiggins, gardener to W. Beck, Esq., Worton Cottage, Isleworth, came Amy, Queen Victoria, Baroness Rothschild, Duke of Cambridge, Mrs. Coleman, and Perfection. Of seedlings one or two were shown. Mr. Turner furnished James Andrews, a bright purplish self; Vicar of Cauntton, dark disk with a white ring round it, and broadly edged with crimson, Prairie Bird, blue, with small white ring round the disk; Mrs. Harvey, dark disk, set in a broad belt of white, and tipped with crimson; Great Western, something like James Andrews, but with more crimson in it; Artist, crimson, with pale centre; Queen of the May, dark disk, encompassed by a white ring, and tipped with crimson; and Eton Boy, crimson. Messrs. Smith of Dulwich, Turner of Slough, Henderson and Sons, Wellington Road, St. John's Wood, have fine collections now in bloom.

THE LACE-LEAF PLANT.

OUVIRANDRA FENESTRALIS.

Among recent introductions to our stoves, few plants have caused greater sensation than this curiosity from Madagascar. When first exhibited by Messrs. Veitch, it

attracted the attention and excited the admiration of the horticultural world far more than any novelty of the past twenty years, and now that it has been distributed, and has its proper place in the stove aquarium, it is as much admired as ever for its beauty, and continues to excite curiosity as an example of one of the freaks of Nature. The best account of this rare plant which has yet appeared is in the third volume of "Recreative Science," from the pen of Mr. C. W. Crocker, of Kew, who has contributed to the same work numerous able papers on the palms, and other rarities of the national collection. We introduce it to the attention of our readers as a choice subject for cultivation, and one that, by its peculiar constitution, will severely try the skill of the cultivator. For the introduction of this plant we are indebted to the Rev. W. Ellis, author of "Three Visits to Madagascar," a zealous missionary, who, amid the dangers of preaching the Gospel in a land where, for many years past, the life of a Christian has been reckoned of less value than that of a beast of the field, has found time to explore the rivers and woods of that luxurious island, and add to the stores of our knowledge of its animal and vegetable products. Mr. Ellis was the discoverer of the wonderful orchid *Angræcum sesquipedale*, exhibited by Messrs. Veitch, before the Floral Committee of the Royal Horticultural Society, on the 10th of December last, as well as of many other curious and beautiful additions to the treasury of our stoves. The plant was known vaguely long before Mr. Ellis set out upon his last voyage to Madagascar, and it was at the suggestion of Dr. Lindley that he



ORGANS OF FRUCTIFICATION.—1. Inflorescence, natural size; 2, the same previous to expansion; 3, the cap or calyx in which the blossoms are inclosed, as in fig. 2; 4, portion of matured blossom spike magnified; 5, one of the pieces of the perianth magnified; 6, a stamen magnified; 7, an ovary magnified; A, stigmatic papille.

took with him a drawing of it for purposes of identification, having distinctly in his mind, as an object properly associated with his divine mission, to send to England whatever rare and beautiful objects he should find of a character suitable for culture in this country. Plants were soon found, but it was a less easy matter to secure their safe transmission to these shores. They were planted in glass jars filled with water, were carried safely to the Mauritius, and were at last landed in England, and presented to the Royal Botanic Gardens of Kew, and Regent's Park, whence they were distributed as soon as their proper culture was sufficiently understood to allow of their increase.

The generic name *Ouvirandra* is derived from the native appellation of the plant. It is called in Madagascar *Ouvirandra*, the water yam. It is a common inhabitant of the brooks and rivers of that country, and is a common article of food—the fleshy root, when cooked, yielding an abundance of nutritious farina. Mr. Ellis says “the roots are collected at certain seasons of the year, and sent to the markets in great plenty, being highly esteemed and used in much the same way as we use the potato.” The specific name *fenestralis* explains itself; it means the *window leaf*, the foliage of the plant consisting of ribs and veins only without parenchyma, so that the leaves consist of net-work only, natural skeletons. In the young leaves some parenchyma is present, but this disappears as they arrive at maturity, when the net-work of whitish green threads presents a lace-like appearance, and every movement of the water causes them to wave about with a most graceful mobility. The leaves are wholly submerged, but the flower-scape rises above the surface of the water, and though by no means beautiful, is nevertheless as interesting as any other part of the plant.

The leaves, which are the principal objects of attraction, grow to a length of from fifteen to eighteen inches, and average two to three inches wide. From the base of the leaf run from ten to fifteen nerves parallel with the mid-rib, but converging together both at the base and the apex, so as to form a lengthened oval outline. These nerves are connected by thinner threads, which thus form a rectangular lace-like pattern, extremely regular and exquisitely delicate in conformation. In the growth of this plant we see a compensating principle similar to that observed in *Vallisneria spiralis*, though of a different kind. In *Vallisneria*, the spiral flower-stalk contracts or unrolls according to the depth of the water, so as to

keep the flowers above the surface; in this plant the leaf-stalks grow to a lesser or greater length, according to the depth of water, so that the leaves are always in a horizontal position about an inch or so beneath the surface. The flower-scape is a forked spike covered with minute blossoms of a whitish green colour, and are succeeded by an abundance of seeds which ripen in this country, and are generally fertile.

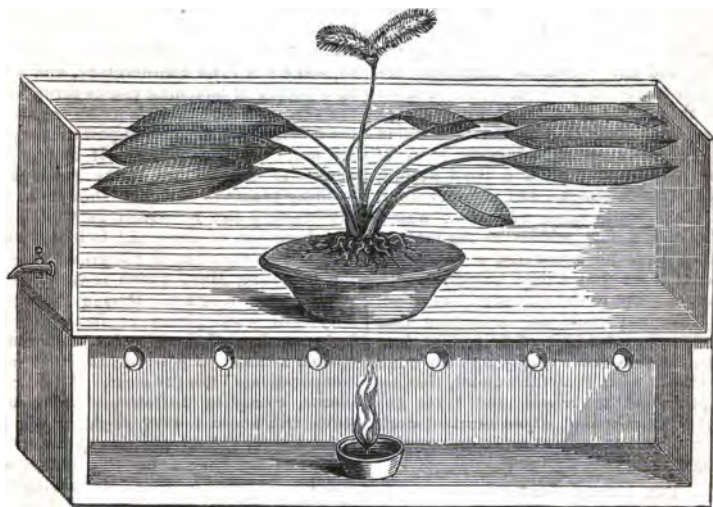
In the culture of this plant many difficulties have been experienced, but they have all been surmounted, and it may be grown in any stove, either in an aquarium devoted to such plants as *Nelumbium*, *Nymphaea*, and *Limnchara*, or in a vessel expressly constructed for it. In any case it must be wholly immersed, and have stove temperature. Success is only to be hoped for by an imitation of the conditions under which the plant grows in its native country; and, therefore, the cultivator will do well to consult Mr. Ellis's account of its habit and economy. It grows in streams of tepid water, under a burning sun. Like the *Potamogeton* of our own brooks it likes to root in a rich, firm loam, and it prefers a flowing stream of pure water. Whether the last condition will ever be adopted remains to be seen. Hitherto it has been grown in stagnant water, or the water is changed only at intervals. We commend to the attention of the spirited cultivators of stove plants the idea of constructing for this plant a tank with a constant run of tepid water, in which, doubtless, its growth will be more satisfactory than under other conditions.

Whether in a special tank—which is certainly advisable—or grouped with other tropical aquatics, the soil should be strong yellow loam without any admixture of manure, over this should be laid broken spar or quartz, or large well-washed pebbles. As in the course of time the spar or pebbles will get coated with a green growth of *confervæ*, they will require to be occasionally removed and scrubbed or replaced with new material. The plant must at all seasons have as much light as possible; this is especially necessary with young plants, which are apt to die if shaded, or if the weather is cloudy for any length of time. The temperature during summer should average 75° to 85°, but during bright sunshine 90° will not be too high, as the brooks of Madagascar are often at that temperature for weeks together. Seedling plants should be raised on thin layers of loam laid on tiles submerged about three inches, from which they may be removed for planting when beginning to show signs of maturity in becoming skele-

tenized. To guide the cultivator as to the extent of space a plant will require, we may mention that the best plant at Kew extended its leaves over a space of nearly five feet diameter, and a square or circular tank of at least those dimensions should be adapted for it. There is in this country another species, not so well known as *Fenestralis*. It is called *Ouvirandra bernieriana*, and is distinguished from the other by its narrower leaves and coarser threads, and by producing three or five branched

spikes of rosy flowers. This will succeed with the same course of treatment, but is less esteemed because less elegant.

The subjoined figure will show how this rare plant may be grown in a stove where there is no tank, or in a greenhouse or conservatory, and it places within the reach of every gardener and amateur one of the most remarkable productions of tropical climates. We are indebted to "L'illustration Horticole" for this excellent adaptation of the idea of the Waltonian case.



TANK FOR CULTURE OF OUVIRANDRA FENESTRALIS.

LITTLE GARDENS AND FLOWERY WINDOWS.

(Continued from page 79.)

FERN CASES.

The fern-case, as every one knows, is to enable town people to grow ferns and lycopods in the midst of smoke and draught; but the fern-case requires careful management to give it a creditable appearance. Everybody who has had to do with one knows what a tendency the ferns have to fog off, or get drawn up; we believe this may be counteracted by means of fine wire gauze, which will admit the necessary air filtered and purified. The ferns most suitable for the case are those of dwarf habit; those we have already named will do, but there are others, as *Asplenium septentrionale*, *A. alternifolium*, *Adiantum capillus veneris*, etc.,

which are of very dwarf habit, but we fear these have become scarce in a wild state, and of high price in trade. The ferns may be planted in the soil described already; the case should be drained, but if in a room, something should be placed to catch the surplus water; the foliage should be sprinkled occasionally, but the case should not be closed up while very wet. Lycopods, of which there are several varieties, are all suited to the fern-case.

Although the aquarium is beyond our province, yet as it is becoming a common window ornament, a few words respecting it may not be out of place. Our impression is that the aquarium opens on a wide scale the study of the principles of the economy

of nature. In it we find proof that nothing is wasted ; by a little thoughtful study, and a little close attention to the aquarium, we may be enabled to understand how the gas repelled from human lungs may furnish wholesome food to the plant or tree ; how the plant or tree having received and decomposed that gas, returns the pure element which is essential to our existence. In the aquarium we behold a miniature world, in which the animal, the vegetable, and the mineral portions contribute to each other's support, from the fact that a fish cannot exist in water alone in a glass case, but can if a water weed be placed in with it. We learn that the animal and the vegetable kingdoms are essential to each other's existence in more ways than one ; through it we begin to realize something of the Divine wisdom displayed in even the simplest form of creation. We may place a pond weed, a couple of sticklebacks, and a water snail in a glass bottle filled with clear water, and having a few pebbles at the bottom, we then have an aquarium, a miniature world, that we may amuse ourselves with for hours. But to the contemplative mind, even this may yield an impression that cannot, will not admit of being put into words, one that sinks deeply into the mind and fills it with grateful wonder, that we are permitted to behold and trace the works of the Creator, whose simplest work man can imitate only at an immeasurable distance.

THE LITTLE GREENHOUSE.

This section of horticulture is becoming very prevalent. Many of the less assuming suburban residences can boast of having a small greenhouse attached to them ; and many working men have built something of the kind for themselves ; but the manner in which some of them are stocked or furnished, presents an appearance somewhat approaching the ludicrous. The object appears to be to have something in them, no matter what, either a plant or only a shabby apology for one, sometimes a few leafless sticks in as many pots, sometimes pots alone. Of course this is to be attributed to inattention or injudicious attention, and both may arise from various causes ; but we have only to do with instances where it arises from the want of knowing how to do better, and we should fail to instruct, were we merely to lay down certain rules to be observed at stated times of the year ; directions for putting the component parts of a watch together might be written out clearly and distinctly, but not directions for growing a plant. We

can only give useful hints, to be applied as circumstances dictate ; but skill in plant growing is only acquired by attending to causes and effects. A greenhouse enables us to grow exotic plants which would not otherwise stand our climate ; it also enables us to have flowers at a time of the year when we should otherwise be without them ; this at once opens the question, what are the best kind of plants to furnish a greenhouse with. There are two all-important purposes for a little greenhouse : one is to make use of it to preserve the geraniums, verbenas, heliotropes, and other bedding plants during the winter ; the other, if there is no garden to furnish, is to make it a little conservatory, and keep up a supply of blooming plants throughout the year. Where there is a flower garden, the former is the most important purpose for the little greenhouse. If during the month of August we strike cuttings of bedding plants (which will then be in full bloom) they can be potted in September, and kept out of doors till October, when they can be stored up in the greenhouse till the following May, which is the time to plant them out again. During the winter they will want plenty of fresh air, the lights or door of the greenhouse should be opened as much as possible ; they will want comparatively little fire-heat. All bedding plants, excepting heliotropes and ageratum, will stand a very slight frost ; the thermometer should not rise above 40° by means of fire-heat. Bedding plants will require but little attention during the winter, it will be necessary merely to pick off dead leaves, and see that they have not too much or too little water. The best things to remain in the greenhouse during the summer, we believe, are fuchsias and achimenes, these being deciduous even in a greenhouse can be placed under the shelves or in a corner during the winter ; but in the summer one or two fine plants will fill out a small greenhouse. Achimenes are more properly hothouse plants, but they flower in a greenhouse, although not so well. The soil adapted for both fuchsias and bedding plants is about two parts loam, one part rotted dung, and one part peat and sand. Although they like a little peat, it is by no means essential ; and, indeed, none of these plants are so particular as to soil as many would have us believe. Use the common earth of the garden if no other can be procured, and feed the plants with liquid manure, where they are established in the pots, and they will do well enough. Liquid manure is easily made by putting a shovelful or two of dung of any sort into a tub of water, and stirring

it well ; a little chamber lye may be added, but not too much, as this is very strong, and will soon affect plants ; a sprinkle of lime will prevent it becoming offensive. But upon making a little greenhouse yield a supply of blossoms throughout the year, a trifle more skill and management will be required. The various plants by which it may be done are—China primroses and heaths, such as *gracilis*, *hyemalis*, *colorans*, etc., for December, January, and February ; bulbs, as crocuses, hyacinths, etc., for March and April ; cinerarias, geraniums, genistas, azaleas, etc., for May and June. Fuchsias will make a splendid show in July, August, and September ; and chrysanthemums will do the same in October and November. None of these plants require more than a greenhouse temperature, and all bloom freely under any ordinary treatment.

The progress of the various subjects may be thus described ; the bulbs are potted in September or October, they are immediately plunged or covered with light earth, and so left till Christmas ; which time we will suppose it is now ; the primulas and heaths are in bloom, and therefore in the most conspicuous part of the house. The fuchsias are bare of leaves and cut into shape, and stowed into a close compass ; the azaleas, genistas, etc., are arranged behind the heaths ; and the cinerarias are by themselves near the glass, where they can be occasionally sprinkled. The cuttings or offsets are taken from the chrysanthemums ; these are neatly potted and labelled, and placed in a shady part of the house. Now is the time to take up the bulbs, wash the pots, and bring them in. While the heaths are blooming they can be coming on, and will begin to bloom early in March and last till May, at which time the cinerarias and azaleas will be opening fast. The heaths meanwhile are cut down and placed in the background till the end of April, when they can be rusted out of doors, and covered with a cloth or mat, should there be any frost ; the bulbs as they cease flowering can be put out of doors too, either plunged in the ground, or left as they are, till the foliage lies, when they can be stored away till the autumn, and then planted in the ground. They seldom bloom well in pots a second time. The cinerarias, azaleas, genistas, etc., now coming into bloom, the month of May will be the gayest of the year. Azaleas do not last a great while in flower, but they make a grand appearance when they are so ; geraniums and cinerarias much longer, they mostly continue in flower till July, a little shading

them in flower much longer, but too much will diminish their beauty.

During the early part of the year the green-fly will attack greenhouse plants ; if these are carefully looked for and destroyed as soon as detected, they will never do any mischief ; but if allowed to become numerous they will make everything look shabby. If the plants are examined early, and only one or two are seen, these can be removed with a brush ; but if they become plentiful we know of nothing better than tobacco smoke to destroy them. We have adopted a method of fumigating which answers very well ; we steep some coarse cartouch paper in diluted saltpetre, then thoroughly dry it, in pieces of this we roll the tobacco, then hang them by one end and light the other ; they smolder and smoke, and invariably do the required slaughter. Early in March, or so, the fuchsias will begin to break, they should then be placed in the light. Keep them in form by stopping the shoots, and as they fill the pots with roots, give them larger ; syringe than occasionally, and give them a little shading ; by July they will begin to flower, and if liquid manure is given to stay them, they will bloom that and the two following months. The chrysanthemums will be about rooted, and require repotting early in April ; harden them off, put them singly, give them as open a situation as possible. Either plunge them or shade the pots ; shift them into larger pots as they require it ; give them liquid manure as they become stronger. Keep them in due form by stopping or tying, and they will be coming into flower in October, and will then take the place of fuchsias. Towards December these again will be going past, when it will come to the turn of primroses and heaths. Primroses are sown early in April, pricked off as soon as large enough to handle, potted singly when they begin to crowd ; shifted as they require it, grown in the shade during the summer, and they will not fail to flower in the winter. The soil we use is one half loam, the other half composed of well rotted dung, leaf-mould, peat, and sand ; the latter we consider an important ingredient.

Heaths and azaleas require peat, they will not grow in the same kind of soil as geraniums, nor should they ever receive liquid manure, if potted in well sanded peat, and grown in an open situation during the summer, they will not fail to flower in the winter ; the roots should be carefully shaded from the sun, but not the tops. It is necessary that the wood should be well shaded ; they require plenty of water, but

as autumn advances more care is required in using it.

Geraniums are generally cut down when they have ceased flowering. They are then allowed to break in the open air, having grown a little. They are generally reduced to smaller pots, in which they stand till February, when they are shifted into larger. Cinerarias are sometimes grown from seed, sometimes from offsets; when grown from seed it is usually sown in July, in a shaded spot, or in a pan or pot, and placed in the shade under a hand-glass. They are pricked into other pots as soon as large enough to handle, then shifted as they increase in size. The soil for these and geraniums is two-thirds loam, one rotted dung, with a little sand. Genistas will do in the same soil, but prefer a little peat added to it. When these have done flowering, cut them down about half way, plunge or otherwise shade the roots; let them be fully exposed while growing. In raising cinerarias from offsets, they are taken from the parents in August or September, potted singly, and otherwise treated the same as seedlings. They like a little sprinkling overhead while growing, especially while fire is necessary. As regards potting, or window gardening, the plants we have named are all of easy culture, and will answer the purpose we have indicated; but the more aspiring have no need to confine themselves within so narrow a compass, while there are camellias, acacias, roses, and a numberless host of other tribes, which only require to be well grown to be admired; nor would we forget ferns, which claim considerable attention on account of their delicate and graceful habit, and for the same reason lycopodiums are worthy of a place where there is a convenience for growing them. These, for the full development of their beauty, require plenty of moisture, rather a humid atmosphere, and well shading; the yellowish tint they acquire from exposure to sunshine diminishes their beauty considerably. Those who are practically unacquainted with plant growing had better begin with a small stock. The vexation and disappointment many experience through the mistaken notion that it is merely necessary to fill a greenhouse with plants to be well up in the art of plant growing, frequently induces them to give up the attempt, and abandon flowers altogether. Had they began with two or three plants of easy culture, success would have increased their love of the art, and induce them to add to the stock with improved knowledge, until they derived pleasure and gratification

from it themselves, while setting a bright example to others. Nothing is more common, yet nothing can be more opposed to the true principles of horticulture than a greenhouse crammed with plants of various kinds, and of different requirements, which, if for no other want than that of room, could not develop a single trait of natural beauty. A plant, unless it is ornamental, or may be made so, is not worth greenhouse room. It is far better to possess half a dozen healthy plants than a host of miserable objects which are neither use nor ornament. If we would derive satisfaction from our work we must not extend it beyond our ability to perform.

It cannot reasonably be denied that a certain amount of recreative amusement is required to maintain that health and vigour which is essential to the full enjoyment of the blessings of this life; nor can it be denied that many of the ills of life are occasioned by neglecting the pleasures of home in seeking those which are found at a distance. The fable of the dog and the shadow may be applied here; for the pleasures derived from the place of amusement are shadows indeed compared to the more substantial ones of home. If an Englishman's home is his castle, let him act consistently with the sentiment, and endeavour to beautify and adorn it. The culture of flowers offers a means of doing so at once cheap and effectual, one that will afford pleasure and interest during its progress, one that is conducive to health and peace of mind.

That something more than the gratification of the outward sense is to be derived from flowers is placed beyond dispute by the fact that man, who is endowed with the power of thought and with reason, finds a pleasure in them which is denied the brute creation. Man is gifted with thought and reason, and it behoves him to maintain those gifts in health and vigour; by due exercise, every flower will afford him the means. Let us examine a flower, and ask ourselves what is the process of its formation—of what is its colouring composed? why has it male and female organs? or why is the generative principle contained in the pollen? We may not be able to answer such questions satisfactorily; but they may lead us into a train of thought that may lift our minds above the too eager pursuit of matters that can administer only to our physical nature.

F. M. CHITTY.

(To be continued.)

CHARACTERS OF CLIMBING PLANTS.

Of plants there are two very obvious distinctions ; namely, herbaceous and ligneous. The first have a fibrous frame, of very delicate texture, clothed and embedded in cellular matter, variously arranged in cuticular and also internal membranes ; the second, in the early stage of their existence, are similarly constituted, but their fibres become gradually woody and very durable. The positions of the stems of both these distinctions are various ; some are erect, others declining, many are procumbent, and several are convolving or climbers.

It is on the last of these we shall offer a few remarks. Climbing plants, whether ligneous, as the grape-vine, or herbaceous, as the cucumber, are furnished with tendrils, which have an involving tendency, and by which they twine round any other plant or slender body which they can embrace. It is observable that these tendrils convolve first one way, for half their length, and the other half the contrary, especially if the first convolutions take no hold. The fact of plants being furnished with tendrils is an evident sign, that, in their culture, they should be supplied with a trellis, or some kind of prop, to climb upon ; and these trellises, or props, should be so formed as to suit the manner in which these prehensile members cling to their supports. Tendrils are of various character ; some, as already said, are convolving ; others have no tortuous tendency, but instead thereof have their points enlarged, like the paw of an animal, and with which they cling to any rough surface ; others again are provided with numerous fibrous processes along the branches, and which adhere to any solid body with which they come in contact. These kinds of tendrils are exemplified by the ivy and Virginia creeper.

Tendrils are produced from different parts of the plants ; from the joints, as in the grape-vine ; from the bark of the shoots, as the ivy ; from the points of the leaves, as in the pea ; or by the twisting or bending back of the petioles over any horizontal body, near which they grow, as in the Virgin's bower.

Another class of climbers have neither tendrils nor fibrous processes to assist their climbing tendency. Their stems having a convolute structure, which, as they are lengthened upwards, keep twining round any perpendicular body within their reach. The hop and the pea are families that they

climb to a considerable height, on poles or rods placed close to them for that purpose. It is remarkable that these two plants ascend spirally, in contrary directions ; the one turning with, the other against, the apparent motion of the sun ; thus showing that their convolute action does not depend on, or is caused by, any external influence to which these plants are subject. It also appears that some climbers gain elevation by a convolvent, and others by a retrovolvent action ; depending, no doubt, on the structural constitution of the stems.

Whatever may be the cause of these curious movements of plants, the cultivator's treatment of them is clearly enough pointed out by their habit. Hence props of various forms are employed, as well as trellisage erected in various figures, either within or without buildings, and either movable or stationary, and composed of either wood or of wire ; of the latter material, some are highly ornamental as well as useful.

Of climbing plants, in general, it may be averred they are extremely elegant in their positions, and a great majority of them bear large and beautiful flowers. There are hardly two genera to be found more splendidly elegant in their blossoms and habit than the Passifloræ and Convolvulacæ ; from among which the most suitable ornaments for covering the columns of stoves, conservatories, and greenhouses, may be selected. The hardy sorts, whether herbaceous or woody, are admirably adapted for covering naked walls, forming arbours, screens, or boundaries in flower-gardens. The greater part of them are, moreover, easily propagated, by seed, by layers, or by cuttings.

The following are a few of the most showy tropical climbers :—*Convolvulus verticillata*, *Thunbergia grandiflora*, *Heteropteris cærulea*, *Convolvulus maximus*, *Cryptostegia grandiflora*, *Pharbitis Learii*, *Teramnus volubilis*, *Galactia pendula*, *Dalbergia scandens*, *Ipomœa Roxburghia*, *I. involucrata*, *Thunbergia coccinea*, *Columnnea scandens*, *Combretum purpureum*, *Corepegia elegans*, *Aristolochia odoratissima*, *A. siphon*, *Petrea volubilis*, *Bignonia floribunda*, *Combretum comosum*, *Ipomœa longiflora*, *I. speciosa*, *Quisqualis pubescens*, *Bignonea venusta*, *Ionessia scandens*, *Pterocarpus scandens*, *Nepenthes phyllamphora*, *N. distillatoria*, *Clematis grandiflora*, *Bignonea grandiflora*, *Banisteria splendens*, *Thunbergia elata*, *Solandra grandiflora*, *Gonolobus grandi-*

flora, *Passiflora hirsuta*, *P. edulis*, *Bauhinia scandens*, *Jasminum augustifolium*, *J. scandens*, *Ipomœa grandiflora*, *Beaumontia grandiflora*.

The following climbers are suitable for either the greenhouse or conservatory :—*Cobœa scandens*, *Clematis chinensis*, *Jasminum grandiflorum*, *Clematis Massoniana*, *Caparis spinosa*, *Aristolochia glauca*, *Kennedia monophylla*, *K. coccinea*, *Lophospermum rodochiton*, *Passiflora cœruleo-ramosa*, *P. incarnata*, *Caprifolium Japonicum*, *C. flexuosum*, *Tecoma grandiflora*, *T. capensis*, *Billardiera fusiformis*, *Convolvulus paunifolius*, *Sollya heterophylla*, *Bignonia capreolata*, *Billardiera scandens*, *B. longiflora*, *Wistaria consequana*, *Kennedia Comptoniana*, *Lophospermum erubescens*.

Hardy climbers being so common and well-known, need scarcely be named ; but a few may be mentioned, especially as several of the new roses have acquired the character of climbers. Of these the principal are what are called Ayrshire roses, of which there are several fine varieties, of different colours, both evergreen and deciduous. The Alpine and Banksian rose, are also climbers, and from them several hybrids have been raised. These roses, trained on a pyramidal frame, have a fine effect as single objects, on turf or elsewhere. Other hardy climbers, or trailers are the families of *Atragene*, *Clematis*, *Vitis*, *Ampelopsis*, *Aristolochia*, *Jasminum*, *Periploca*, *Passiflora*, *Hedera*, *Wistaria*, etc., etc.

NOTES FOR LADY GARDENERS.

FLOWERS that bloom during winter are much and deservedly sought after by the fair sex of the present generation ; but as it is not enough to look after them when the snow and sleet warn us that winter is at our door, let us take time by the forelock, and see that proper arrangements are in due time entered upon, and their wants duly attended to during the forthcoming spring and summer months ; for if duly taken in hand, and properly cared for, there are plants enough to form a very respectable show, to be had in flower during the dull months, without the aid of a forcing-house. To these, as coming within the means, we presume, of the greater part of our readers, we shall first direct our attention, though it must not be denied that the gardener's great strength is in his stove and forcing-pit.

THE NEAPOLITAN VIOLET is a pet with all ladies ; therefore, about this time, if you have any old plants, prepare some finely-sifted soil, consisting of one part leaf-mould, one part sharp sand, and two parts rich loamy earth ; thin away the weakest runners from the plants, then peg down those left, and cover to within an inch from the end with the prepared soil ; frequently sprinkle with soft water, and about the end of May separate them from the parent plant, and plant out on a piece of north border, nicely prepared for them, with three inches of the prepared soil laid on and pressed smooth. Plant seven or eight inches apart each way, and during summer they must be frequently sprinkled from the rose of a watering-pot, otherwise the red spider will attack them and destroy

the beauty of the foliage. All side-shoots must be pinched off as they appear, so as to concentrate the strength of the plant in the main stem and terminal crown. In September they must be lifted, with ball of soil adhering to their roots, and be either potted in four-inch pots, or planted out in a frame placed upon a slight bed of leaves and dung, with six inches in depth of soil, which must be so managed that it is only a few inches below the glass. If potted, they may be set in a cold frame, or on a shelf near the glass, in a greenhouse, but must in all cases have abundance of air. Confinement, and a position away from the glass, would frustrate the cultivator's hopes. If well cared for, they will flower from November to March. Should there be no old plants on hand, and cuttings have in consequence to be procured, they must be pricked into pans, and be placed in a hot-bed, or under a bell-glass in a warm house, until they are struck, afterwards to be treated as above recommended for layers.

THE TREE VIOLET may be treated in precisely the same manner, excepting that the Neapolitan requires to be propagated afresh every spring, whereas the tree violet increases in height and beauty every year for several successive years. The way they are formed is by perseveringly pinching off the side-shoots as they appear, and the plants must be shifted into larger pots as they appear to require it, yet be cautious not to over-pot this plant, or to let worms get into the soil to disarrange the drainage. As soon as they have done flowering, place out of doors on a hard floor in a shaded

place, using the syringe every day in dry weather, and allow them to remain out as long as the weather permits in autumn.

THEE, or PYRAMIDAL MIGNONETTE.—The latter form, when well trained, is certainly the most pleasing, but whichever form of training may be adopted, now is the time for sowing. Fill small pots with loamy soil, in which a little well-rotted dung is blended; sow a pinch of seed in the centre of each pot, and place on a shelf near the glass; when well up, gradually train until only one strong plant is finally retained. If the pyramidal form is adopted, train out the side-shoots, and stake regularly. All flowers must be in all cases pinched out as soon as formed; if trees are wanted, the strength of the plant must for a time be confined to the main stem by pinching away all the side-shoots, as well as the flower from the leader. When the desired height is attained, a trellis of the umbrella form must be put in, and the shoots trained over it. The plants will require shifting into larger pots as they advance, and to be supplied with liquid manure. These must all through the summer be grown under the protection of glass, in an airy situation, and be frequently syringed to keep off the red spider. Pots of mignonette may be had in winter for dressing flower-stands, by sowing a month or six weeks later, and retaining from three to six plants in a pot, not pinching off the flowers, unless they show before they are wanted; but these are not to be compared with a well-grown plant on the training system.

CHRYSANTHEMUM, though more properly belonging to the autumn flowers, yet it stands so far into the winter, and fills up such a blank as to be indispensable. Strike cuttings at once, if not done, by placing in heat, and, although rather late, nice neat plants may yet be produced, perhaps better adapted for general purposes of decoration than the huge specimens grown for exhibition. Take the cuttings six or seven inches long, cut under a joint, and trim off the leaves and buds for about half their length. This prevents them throwing up suckers, and also preserve a clean stem of about two or three inches in length. To

prevent the cuttings flagging too much, tie each one up to a small stick, and sprinkle frequently with water over the foliage, but be cautious not to give too much upon the soil to cause them to rot; a piece of paper or some other material must be placed over them for shade, until they are rooted. When fit for potting off, put each plant into a four or five-inch pot, replace the plants in their former situation until they have taken hold of the new soil, when their stems must be stopped, to cause them to throw out lateral branches, and this must be repeated until July, after which they must not be stopped, as they will require to be put into larger pots as they advance in growth, until they are finally placed in their blooming-pots in July. The soil for the chrysanthemum should be rather light and fine for the first potting, but after that it should be loamy, and contain a large proportion of rotten manure, also for large pots use it rough, and press very firmly into the pots. When the warm weather sets in, they may be placed out of doors on a hard flooring, with moss or litter placed round their pots, to preserve the roots from drought. As the chrysanthemum is a thirsty plant, and must never be allowed to flag for want of water, liquid manure may be given once or twice a-week, and the plants must be housed again before the autumnal frosts injure them; but in all favourable weather, must have plenty of air admitted to them.

Primula sinensis sow at once; place a piece of glass over the pot, and place in a warm situation. Also sow at this time on firmly pressed soil a pinch of cineraria seed; cover with glass until the seed has generated. Both these will be useful for winter flowering if got in at once; their after culture must form the subject of another paper. Also, in order that time may not be lost, put in cuttings of *Solanum capsicastrum* and *pseudo capsicum*; also of Tree carnations, salvias, especially *Salvia splendens*, or any other plant that is known to flower in winter. Those who can reckon on a warm house or pit for their winter flowers, have many things now to get in, either as cuttings, seeds, or plants, about which we must say a few words hereafter.

H. H.

A PEEP AT THE NEW ROSES AT MESSRS. FRASER'S NURSERY.

THE first real day of sunshine in spring sets us thinking of our garden favourites. Accordingly, as a worshipper of the Queen of Flowers, I set off this genial afternoon, to

pay my *devoirs* at the nearest floral shrine, by a visit to the nurseries of Messrs. J. and J. Fraser, Lea Bridge Road.

The Messrs. F. are well-known suc-

cessful exhibitors, particularly in the class of new roses, so that I expected to gratify my curiosity by a peep at some of the forthcoming beauties of the season; nor was I altogether disappointed, though it is early days yet to behold the *debutantes* in full array.

I found a large house full of remarkably fine well-grown plants, as, indeed, I always find them at this establishment in various stages of growth. Some of the older varieties, such as T. Goubalt, S. d'un Ami, and a few other early sorts, were in full bloom, as also were some two or three of the novelties, with more coming on, which I purpose to criticise more in detail at a future opportunity. It is one thing to read the glowing descriptions of their progeny by the French raisers, but quite another to hear that of the candid and experienced cultivator, who actually grows and blooms them here; and I am indebted to Messrs. F.'s very intelligent rose foreman for the following information, which I give as likely to prove interesting and beneficial to intending speculators, in the merits of the yet untried aspirants for the honours of the exhibition table. How many of the fifty or sixty sorts in the lists of Messrs. Wood and Wm. Paul will attain them, and be permanently inscribed in the roll of worthies, remains to be seen.

The most promising of the "new brood," which have not as yet been shown, appear, as far as at present ascertained by actual observation, to be H. P.'s Adolphe, Noblet, A. Damaizin, Alex. Dumas, Turenne, and Souvenir de Comte de Cavour (Margottin), a dark crimson and black shaded, large, full, and vigorous. This is likely to prove a real "trimmer." Beauty of Waltham (Wm. Paul's) seems also to be a good rose, though not particularly novel in colour or character. H. P.'s Comtesse de Segniet, and Monte Cristo, are of little promise, and had better be avoided. Comte de Falloux has been already exhibited, and though much puffed, is scarcely likely to equal, much less to surpass, Senateur Vaisse, G. de Santhenay, or the velvety Louis XIV.

Of the past season's roses I can speak from my own experience to some extent. H. P.'s Duc de Cazes, Jean Bart, and Princess Mathilde, are all very dark, free in the autumn, and vigorous in growth, and likely to make good sorts for the vicinity of the metropolis. Gen. Washington is also A 1. Of the lighter colours

Mad. Furtado, by some considered the gem of the season, is a brilliant colour, something between B. Prevost and La Reine, with a touch of Col. de Rougemont. I am not yet decided whether this may be considered a suburban rose. I am told that Marquise de Paris promises to play an important part in future contest. It is something like General Kleber, an old summer rose, but brighter in colour and superior in form. B. Catherine Guillot is described as of the colour of Bonquet de Flore, with the shape and habit of L. Odier. Such a combination of qualities ought to produce something out of the common way. Among new T.'s, I think Duc de Magenta will be the most useful. It has stood the last winter with me out of doors, protected only by a little cinder-ashes round the cellar, and even this was removed before the last spell of frost. It is much less cut up than Safranot by the side of it, and is now throwing up vigorously from the roots.

I could not avoid noticing, during my visit, a remarkably fine lot of plants in frames, well hardened off, and with my "flower-pot" system of protection, fit even to be planted out at once; and this leads me to add a word to the waverers, some of whom I have in my eye. There is still time to commence rose culture this season, but it must be with plants out of pots, on their own roots, or Manetti, either kind do well near towns. The end of next month is time enough to turn them out, but select them at once. Standards and worked plants, out of the ground, of choice sorts, have long been exhausted, and there are plenty of cultivators short of the varieties they wish for, who will be compelled to fall back upon dwarfs, and who will soon get the pick of the frames.

As an illustration of some of the above remarks, and an encouragement to send to first rate firms, I have just received a dozen choice dwarfs, beautiful little plants in excellent condition, from Messrs. Wood and Sons, the noted growers, of Woodland's Nursery, Mansfield, Sussex. They were nicely packed in moss, and arrived without the slightest damage.

The next pleasure to seeing our favourites is that of hearing or talking about them, which must be my excuse for inflicting these few lines of gossip upon my fellow-amateurs, which I hope, nevertheless, may not be considered *de trop*.

PRION.

Homerton.

SELECTION OF FLOWERS FOR THIS SEASON.

TWELVE BEST PELARGONIUMS OF THIS SEASON.

Queen of England, lower petals of the purest white, upper petals deep rosy carmine spot, without any feather, of good shape and very smooth; free bloomer.

Mr. Sowerby, lower petals lively deep rose, with a slight purplish tinge, light centre, upper petals very glossy maroon blotch, and very even margin, of bright rose; a first-rate June flower.

Volunteer, lower petals crimson purple, upper petals having a fine deep crimson-maroon blotch, with bright even margin of crimson-purple, large, fine shape.

Lady of the Lake, lower petals delicate pale pink shaded, stiff and smooth, large round petals, upper petals having a spot of deep maroon shading off with light rosy-purple, distinct.

Captivation, large, deep rosy crimson lower petals, occasionally with a blotch of deeper shade, white eye, upper petals maroon, with narrow bright even margin.

Butterfly, a white flower of excellent quality, lower petals pure white, upper petals white, large spot of carmine, very stiff and of good shape; profuse bloomer.

Lord Elcho, bright vermilion, with light bluish tint in the centre, giving it a very rich appearance, top petals have a clouded chocolate-crimson blotch shading off to the margin; top petals rather rough.

The Comet, heavily painted, spotted flower, lower petals veined purplish-crimson, with a deeper spot on each, and leaving a narrow margin; dwarf habit, late.

Dictator, new colour, lower petals lilac-purple, with deep decided maroon spots on the lower petals, the upper petals have a deep maroon blotch, slightly shading off, with a distinct margin of lilac-purple.

Mademoiselle Patti, bright pink lower petals, suffused with rose, violet-rose upper petals, bright margin, striking and useful.

Hebe, lower petals white, suffused with rosy purple, upper petals rich rosy crimson.

Fairy, pure white, with rosy carmine blotch on the upper petals, very much resembling The Bride; will, perhaps, be a more certain grower than Cloth of Silver.

BEST BEDDING GERANIUMS.

Plain-leaved Scarlet.—Frogmore Improved, and Punch. Defiance and Wellington Hero, for pot culture, and for training up conservatory pillars.

Cerise.—Beauté de Meldoise, Lady Myddelton, Le Titien.

Rose-Pink.—Christina, Rose Queen.

Horse-shoe-leaved Scarlet.—Baron Hugel, Captivation, Lilliput, Martin Gireau, Queen of England, Scarlet Perfection. Bishopstowe, Conway's Royalist, and New Globe.

* * * We recommend the substitution of Beauty of Brixton for British Flag; the latter is a shy bloomer; the former full, and the finest formed out. Mr. Oubridge of Stoke Newington has the stock of it.

Cerise.—François Chardine, Mons. Martin, Rubens, and Sheen Rival; and for pot culture, Paul Labbé.

Salmon or Flesh colour.—Prince Louis of Hesse; and for pot culture, Aurora and Blackheath Beauty.

Blush, with Pink centre.—Henri de Beaudot.

White.—Madame Vaucher and Nivea floribunda.

Nosegays.—The best sorts are Crystal Palace, Imperial Crimson, Pink Nosegay, and Red Nosegay. Of good secondary sorts, of larger growth, there are Bishopstowe Nosegay, Purple Nosegay and Salmon Nosegay.

Variegated-leaved.—Golden Chain and Lady Cottenham are pronounced to be useful varieties. Of the scarlet-flowered cream-edged sorts, Annie, Alma, Bijou, Burning Bush, Countess of Warwick, Julia, Perfection, Scintillatum; and for pot culture, Picturatum. Of those with cerise-scarlet or rosy-tinted blossoms, Flower of the Day and Flower of Spring, both first-class sorts. Besides the foregoing, Lilac variegated and St. Clair, both with pink flowers, are considered useful varieties of secondary rank. The varieties having the whitest edge foliage are, Alma, Bijou, Jane, Mrs. Lennox, Mountain of Light, Mountain of Snow, and Perfection.

THE WORK OF THE SEASON.

PURCHASING PLANTS.

People who are in earnest about making the grandest effects possible according to

their means, would do well, during the present month, to read all the papers that have appeared in the four volumes of the *FLORAL WORLD* on the subject of bedders. Such

took with him a drawing of it for purposes of identification, having distinctly in his mind, as an object properly associated with his divine mission, to send to England whatever rare and beautiful objects he should find of a character suitable for culture in this country. Plants were soon found, but it was a less easy matter to secure their safe transmission to these shores. They were planted in glass jars filled with water, were carried safely to the Mauritius, and were at last landed in England, and presented to the Royal Botanic Gardens of Kew, and Regent's Park, whence they were distributed as soon as their proper culture was sufficiently understood to allow of their increase.

The generic name *Ouvirandra* is derived from the native appellation of the plant. It is called in Madagascar *Ouvirandra*, the water yam. It is a common inhabitant of the brooks and rivers of that country, and is a common article of food—the fleshy root, when cooked, yielding an abundance of nutritious farina. Mr. Ellis says “the roots are collected at certain seasons of the year, and sent to the markets in great plenty, being highly esteemed and used in much the same way as we use the potato.” The specific name *fenestralis* explains itself; it means the *window leaf*, the foliage of the plant consisting of ribs and veins only without parenchyma, so that the leaves consist of net-work only, natural skeletons. In the young leaves some parenchyma is present, but this disappears as they arrive at maturity, when the net-work of whitish green threads presents a lace-like appearance, and every movement of the water causes them to wave about with a most graceful mobility. The leaves are wholly submerged, but the flower-scape rises above the surface of the water, and though by no means beautiful, is nevertheless as interesting as any other part of the plant.

The leaves, which are the principal objects of attraction, grow to a length of from fifteen to eighteen inches, and average two to three inches wide. From the base of the leaf run from ten to fifteen nerves parallel with the mid-rib, but converging together both at the base and the apex, so as to form a lengthened oval outline. These nerves are connected by thinner threads, which thus form a rectangular lace-like pattern, extremely regular and exquisitely delicate in conformation. In the growth of this plant we see a compensating principle similar to that observed in *Vallisneria spiralis*, though of a different kind. In *Vallisneria*, the spiral flower-stalk contracts or unrolls according to the depth of the water, so as to

keep the flowers above the surface; in this plant the leaf-stalks grow to a lesser or greater length, according to the depth of water, so that the leaves are always in a horizontal position about an inch or so beneath the surface. The flower-scape is a forked spike covered with minute blossoms of a whitish green colour, and are succeeded by an abundance of seeds which ripen in this country, and are generally fertile.

In the culture of this plant many difficulties have been experienced, but they have all been surmounted, and it may be grown in any stove, either in an aquarium devoted to such plants as *Nelumbium*, *Nymphaea*, and *Limnchara*, or in a vessel expressly constructed for it. In any case it must be wholly immersed, and have stove temperature. Success is only to be hoped for by an imitation of the conditions under which the plant grows in its native country; and, therefore, the cultivator will do well to consult Mr. Ellis's account of its habit and economy. It grows in streams of tepid water, under a burning sun. Like the *Potamogeton* of our own brooks it likes to root in a rich, firm loam, and it prefers a flowing stream of pure water. Whether the last condition will ever be adopted remains to be seen. Hitherto it has been grown in stagnant water, or the water is changed only at intervals. We commend to the attention of the spirited cultivators of stove plants the idea of constructing for this plant a tank with a constant run of tepid water, in which, doubtless, its growth will be more satisfactory than under other conditions.

Whether in a special tank—which is certainly advisable—or grouped with other tropical aquatics, the soil should be strong yellow loam without any admixture of manure, over this should be laid broken spar or quartz, or large well-washed pebbles. As in the course of time the spar or pebbles will get coated with a green growth of *confervae*, they will require to be occasionally removed and scrubbed or replaced with new material. The plant must at all seasons have as much light as possible; this is especially necessary with young plants, which are apt to die if shaded, or if the weather is cloudy for any length of time. The temperature during summer should average 75° to 85°, but during bright sunshine 90° will not be too high, as the brooks of Madagascar are often at that temperature for weeks together. Seedling plants should be raised on thin layers of loam laid on tiles submerged about three inches, from which they may be removed for planting when beginning to show signs of maturity in becoming skele-

of June are owing to deaths through too much haste in turning plants out. Make it a rule to let plants stand about, if only in some yard where they are placed when first unpacked for a day or two after receiving them.

The rule for planting out is to place the subjects at such distances that they will meet by the middle of August. Geraniums that spread like Tom Thumb and Christine may be a foot apart; lobelias, four inches to be rich, six inches if you can't afford close planting; verbenas, in rich soil, fifteen inches apart; petunias to be pegged down, eighteen inches; if to grow upright, nine inches. Plants of untidy habit, used in back rows of ribbons, may be kept in order by lengths of tarred rope or stout cord tightened to short stakes, and in this way anything from petunias to sweet peas may be kept as regular as a file of riflemen. Rich soil suits verbenas, petunias, and lobelias; geraniums and *tropæolums* generally do best in poor sandy soil; if they have much food, they are apt to run away, and make too much leaf. All variegated plants keep truer and brighter in poor soil; generally speaking, an admixture of chalk and broken bricks with the ordinary loam of gardens is favourable to the preservation of the true colours of plants with variegated leaves. I spoilt a whole set of golden euonymus, one of the loveliest of hardy shrubs, by planting them in rich soil. They lost their golden livery, and came out in vulgar Lincoln green. My *furfugiums* will be worth nothing this season. I have just potted them in large pots with a rich compost; they will grow very green in consequence, but they are not to be shifted next year, and I expect them then to be superb, full of vigour, but by that time starving at the roots. I made Dandy as green as grass by bedding it out in highly manured soil three years ago, and then restored it to its own charming character by potting the plants in sifted sweepings of the gravel-path with a little poor tough loam to give it body.

Bear these things in mind, for they apply directly to the management of all variegated plants, even up to aucubas, which are much greener when heavily manured than in sound loam with no manure at all.

Be in no hurry to plant out. Begin with calceolarias, as they are very hardy. Choose dull dry weather, if possible. Mark off the ground and count the plants, so as to be safe and sure before you begin. Open a hole with a trowel, then stick the trowel in the ground. Take the pot in the left hand, with the fingers over the soil, turn it

up, and give the edge of the pot a tap on the handle of the trowel. Out comes the ball; pick away the crocks without hurting the roots, and turn over the ball without breaking it into the hole, and close in with dry crumbly soil from the surface of the border. Plant firm, throw the crocks into the empty pot, and put the pot to the right hand, and keep on working to the left, or, *vice versa*, according to your custom of working, to left or right. To tumble crocks and pots about is untidy and wasteful. Let the garden-boy gather up, and at once wash the pots, and store them ready for use again.

GOOD OLD BEDDERS.

The two best geraniums in existence for bedding are Crystal Palace Scarlet and Christine. The first is precisely like Tom Thumb, but holds in bloom much longer, and is brighter in the mass. The second is a cheerful rose, and the most profuse blooming geranium known. Tom Thumb is not to be discarded, though; on a poor sandy soil in a sunny position it makes its own effect, because its blooms are blazing red and it has no horse-shoe. We can do without horse-shoe geraniums now. When Huntsman came out thirty years ago it was a wonderful thing; we could not tolerate such a trashy plant now-a-days. The plain-leaved geranium will carry the day against all others, *cæteris paribus*, for when bedded, the horse-shoe mark, pretty as it is when the plant is in a pot, has the effect of rendering the foliage dingy instead of being a true complement to the scarlet flowers. In Tom Thumb the complement is perfect, and people who know nothing about the laws of colour, seize upon it with as much eagerness as the colourist, and both for the same reason. If a zoned geranium is wanted, Cottage Maid is the best we have.

To make a change in the style of colouring, try Rubens, the best of the salmon red geraniums, and a famous good bedder, with *Perilla Nankinensis*, or *Amaranthus speciosa*, or Purple Nosegay. Reidii has been condemned by the Floral Committees of the Horticultural Society, but I will venture my head that where a strong grower and a mighty bloomer, with large trusses, and a clear white eye is wanted, it will be hard to beat it now. My plants of Reidii are five feet high, and are to be trained as last year against a white wall, which is fitted with uprights and horizontal wires to tie them to, and magnificent they look there as the back row of a border of scarlets. The one to use before either that or Queen, is Crimson Perfection, deep

of nature. In it we find proof that nothing is wasted; by a little thoughtful study, and a little close attention to the aquarium, we may be enabled to understand how the gas repelled from human lungs may furnish wholesome food to the plant or tree; how the plant or tree having received and decomposed that gas, returns the pure element which is essential to our existence. In the aquarium we behold a miniature world, in which the animal, the vegetable, and the mineral portions contribute to each other's support, from the fact that a fish cannot exist in water alone in a glass case, but can if a water weed be placed in with it. We learn that the animal and the vegetable kingdoms are essential to each other's existence in more ways than one; through it we begin to realize something of the Divine wisdom displayed in even the simplest form of creation. We may place a pond weed, a couple of sticklebacks, and a water snail in a glass bottle filled with clear water, and having a few pebbles at the bottom, we then have an aquarium, a miniature world, that we may amuse ourselves with for hours. But to the contemplative mind, even this may yield an impression that cannot, will not admit of being put into words, one that sinks deeply into the mind and fills it with grateful wonder, that we are permitted to behold and trace the works of the Creator, whose simplest work man can imitate only at an immeasurable distance.

THE LITTLE GREENHOUSE.

This section of horticulture is becoming very prevalent. Many of the less assuming suburban residences can boast of having a small greenhouse attached to them; and many working men have built something of the kind for themselves; but the manner in which some of them are stocked or furnished, presents an appearance somewhat approaching the ludicrous. The object appears to be to have something in them, no matter what, either a plant or only a shabby apology for one, sometimes a few leafless sticks in as many pots, sometimes pots alone. Of course this is to be attributed to inattention or injudicious attention, and both may arise from various causes; but we have only to do with instances where it arises from the want of knowing how to do better, and we should fail to instruct, were we merely to lay down certain rules to be observed at stated times of the year; directions for putting the component parts of a watch together might be written out clearly and distinctly, but not directions for growing a plant. We

can only give useful hints, to be applied as circumstances dictate; but skill in plant growing is only acquired by attending to causes and effects. A greenhouse enables us to grow exotic plants which would not otherwise stand our climate; it also enables us to have flowers at a time of the year when we should otherwise be without them; this at once opens the question, what are the best kind of plants to furnish a greenhouse with. There are two all-important purposes for a little greenhouse: one is to make use of it to preserve the geraniums, verbenas, heliotropes, and other bedding plants during the winter; the other, if there is no garden to furnish, is to make it a little conservatory, and keep up a supply of blooming plants throughout the year. Where there is a flower garden, the former is the most important purpose for the little greenhouse. If during the month of August we strike cuttings of bedding plants (which will then be in full bloom) they can be potted in September, and kept out of doors till October, when they can be stored up in the greenhouse till the following May, which is the time to plant them out again. During the winter they will want plenty of fresh air, the lights or door of the greenhouse should be opened as much as possible; they will want comparatively little fire-heat. All bedding plants, excepting heliotropes and ageratum, will stand a very slight frost; the thermometer should not rise above 40° by means of fire-heat. Bedding plants will require but little attention during the winter, it will be necessary merely to pick off dead leaves, and see that they have not too much or too little water. The best things to remain in the greenhouse during the summer, we believe, are fuchsias and achimenes, these being deciduous even in a greenhouse can be placed under the shelves or in a corner during the winter; but in the summer one or two fine plants will fill out a small greenhouse. Achimenes are more properly hot-house plants, but they flower in a greenhouse, although not so well. The soil adapted for both fuchsias and bedding plants is about two parts loam, one part rotted dung, and one part peat and sand. Although they like a little peat, it is by no means essential; and, indeed, none of these plants are so particular as to soil as many would have us believe. Use the common earth of the garden if no other can be procured, and feed the plants with liquid manure, where they are established in the pots, and they will do well enough. Liquid manure is easily made by putting a shovelful or two of dung of any sort into a tub of water, and stirring

attention. The prevailing effect is a yellowish gray, the plant of close dwarf growth, and when at its best resembling what we should suppose a golden Dandy to be, but the flowers are blue, and that is quite a new feature in variegated front lines. Everybody should order this with their summer stock if only to see it, and determine what to do with it hereafter, and to propagate it all the summer if there is any intention of bedding it next season. What a splendid sight would a double or treble row of *Bellis perennis aucubifolia*, that is, the variegated-leaved daisy, be with its exquisitely marked golden leaves and fine crimson double flowers. Let those who possess it judge now whether it ought not to be increased by offsets, and kept in pots for use some day when the stock became large enough as a front line to *Lobelia speciosa*, or the new *Lobelia Kermesina*, which I saw the other day at Messrs. Carter's, with blossoms of a rosy purple, quite a new colour, and a new field for contrast.

HERBACEOUS PLANTS.

During May and June all the choice varieties of herbaceous plants should be raised from seeds or cuttings. Where the sorts required are already in the ground, cuttings are far less trouble than seed. I shall put in lots of cuttings of *Alyssum saxatile*, which I have true, thanks to Mr. Thompson of Ipswich; also the pretty white perennial Candytuft, *Cheiranthus Marshalli*, *Aubrietia grandiflora*, double walls, and every other hardy border and rock plant of which cuttings may be had at this time of year. As they go out of bloom is the right moment to take them, and that avoids all the untidiness and bother of saving seed. It is only necessary to catch the right moment to make sure of whole

forests of early blooming border and rock plants. There is nothing like early sowing of the kinds to be raised from seed, say the end of May for most, and the middle of June for the remainder. By this plan you get them strong before winter, and a few can be potted up in September to bloom under glass early the following season to help out the cinerarias, dielytras, etc. Never sow any really good seed of herbaceous perennials in the open ground. Most of them will do very well that way, but they incur too many risks of being eaten by vermin, burnt by the sun, or otherwise, that sowing on the open border is a very bad practice. I always sow columbines, delphiniums, hollyhocks, and the rest, in seed pans in good fuchsia compost, put the pans in a frame, put the plants into thumb pots, and from the thumbs plant them out on rich four-foot beds in rows across, with a tally to every row. By this process they become stocky, very strong, but not so sappy as to be in danger during winter, unless the position is too damp; give them liberal culture all the season, keep down weeds, transplant them two or three times if you can to check them, and cause the formation of large masses of roots, so they will lift at last in large balls. Winter them on raised beds to be safe from damp, and pot a few of each of the choicest; for though hardy, the best of our dianthus, delphinium, aquilegia, pansy, polyanthus, etc., are too good to risk them over-freely in a world where snails abound, and frosts often follow drenching rains. Perhaps I am over-cautions, as on my wet clay I cannot keep a wallflower except on raised banks or in pots, and every grower will know best on that point as to what may be done with his own particular soil and climate.

SHIRLEY HIBBERD.

HEREMAN ON VINE AND FRUIT-TREE CULTURE.*

MR. HEREMAN, the manufacturer of the patent Paxtonian houses, has published a small work for the guidance of persons about to erect Paxtonian houses, as well as for their initiation into the mysteries of growing grapes and orchard-house fruits. It is admirably done; indeed, it could hardly be otherwise, for Mr. Hereman is a man of ripe experience in the subjects on

which he has chosen to discourse in this attractive and interesting pamphlet. Those who have read Mr. Rivers's "Orchard Houses," will find it interesting to observe how another writer on the same subject has taken an altogether different course, so as to give information not to be found in Mr. Rivers's work, and which, in a certain sense, is a supplement to it. The principal object of the book, however, is to explain the peculiar excellencies of the Paxtonian houses, the best modes of fixing and heating them, as well as to indicate the most

* "A Hand-book of Vine and Fruit-tree Cultivation, as adapted to Sir Joseph Paxton's Patent Hothouses." By Samuel Hereman. London: Bradbury and Evans.

ing too late in the autumn, or, as the winter has been a mild one, they have perhaps grown out of bloom into leaf for want of a check. A nurseryman near us grows an immense number for market, and has to furnish a large mass of them in flower for an annual festival. He grows them precisely as recommended in the paper which appeared in the *FLORAL WORLD* in March, 1861. After they are potted in September they are watered and shut up rather close for a fortnight; they are then aired, and after that have no care at all until taken out of the frames to force. We imagine yours are the worse for too much kindness. Lily of the Valley ought not to be grown in pots more than one season. Take them up when just breaking through the ground, pick out the plumpest bulbs and pot them; replant all the weak ones. If these grow in a border that suits them, a quantity of flowering bulbs may be taken up every year. Those sent to Covent Garden are all potted from old borders.

CYCLAMENS, ANNUALS FOR THE NORTH.—*M. M. S.*

—When done flowering, put them out of doors and give no water. When the seeds are ripe and the leaves withered, lay them on their sides till September, then shake them out and repot and place in the greenhouse, with very little water till they are growing freely. By referring back you will find abundant information on the subject. The best annuals for a cold clay, near Newcastle, are any of the showy Californian kinds sown in pans in a pit or frame, or on a gentle hot-bed, and planted out when the ground is warm. All those specified in last month's article as good for clumps and borders, will suit your unfavourable climate if grown during their first stage under glass. If you grow *Oxalis rosea*, *Hunnemannia*, *Nemophila maculata*, *Leptosiphon*, or *Fenzlia dianthiflora*, or *Ipo-meae*, get them forward in pans, and do not plant them out till May. Give preference to the crimson, purple, and white candytufts, *Nemophila insignis*, *Campanula speculum*, *Venus's Navel-wort*, *Silene armeria*, *Kaulfussia amelloides*, *Viscaria oculata*, *Gilia rosea*, *Escholtzia crocea*, and poeony poppy, and others that we have described as suitable for autumn sowing, as they are the hardiest.

SPHAGNUM.—*W. L. G.*

—This is a moss which abounds in most boggy places, and generally grows in spots where it is covered with about two inches of water all winter, in sappy unsafe ground. There are a few spots on Hampstead Heath where we can always obtain a supply, and that is the nearest spot we know for it near London. It is a gray moss, of coarse texture, very distinct in character, and when bitten between the teeth yields a bitter taste. It is useful for a hundred different purposes in horticulture, and is largely used by nurserymen to pack plants in, as it retains a certain amount of moisture when dry to the touch, and is so astringent that it prevents decay of the plants packed in it. You can obtain fern spores of the first-class seedsmen; any who advertise in this work will supply you.

PLANTS FOR WALL OF GREENHOUSE.—*C. E. C. T.*

—The north-west end of a cool house is just the place for a hundred different hard-wooded plants, interesting both winter and summer. If you have a border there with eighteen inches of soil, rich sandy loam and turfy peat, equal parts, you might cover the wall with *camellias*, *Magnolia grandiflora*, *Stautonia latifolia*, or any of the shrubs recommended to *H. M. G.*

MYRTLE FENCES.—*R. Forsyth.*

—At first thought, it seems as if a myrtle fence would be best adapted for gardening in Italy or in the moon; but on a second thought the thing assumes a

feasible shape, and we remember to have once done something like it. Our freak was to have a row of dwarf myrtles as the front line of a belt of shrubs, and we propagated plants for the purpose, planted them out on nice rich soil, and took them up every autumn and kept them in pots all winter. We have one of the identical plants now, an old stump which was left out with dozens of others of the same lot, and the only one that escaped the winter of 1860-61. It is quite a wonder that, in our papers on evergreen shrubs, we did not go into the subject at length. You can do it certainly for a division line of four or five feet high. Treat them as bedding plants; prune them sufficient to keep them close and regular; give plenty of water all summer; take up in October, and pack their roots in sand, or pot them, and plant out again at the end of April. *M. communis* is the only myrtle fit for the purpose.

VARIOUS.—*J. E.*—Much obliged for the seeds, which we have divided and despatched to the correspondents who applied for them. The finest of the grasses is probably *Aira canescens*, the coarser probably *Aira præcox*. You know how unsatisfactory it is to name plants from imperfect specimens, especially ferns and grasses.—*Brentingby.*—*Narcissus* exigentia, which your friend is anxious to obtain, we can find no tidings of, either in Sweet's *Hortus Britannicus*, Don's Catalogue, or any of the more generally used books of reference. Can any reader oblige our correspondent with information concerning it? we imagine it to be one of the extinguished *Hippesastrums*, which, with other good things, has been trodden out by the overpowering pace of the bedding system. Your *fuchsia* curls its leaves because the weather is cold; it will be all right in a week or two, when we have a little more sunshine.—*H. M. G.*—*Myrtles*, *Veronica Lindleyana*, *Ceanothus papillosus*, *Metrosideros capitatus*, *Habrothamnus fasciculatus*, will be good subjects for your little unheated house on a south wall. The last will require shade when in bloom, and as it blooms on last year's wood, must not be pruned after flowering. Other suitable subjects may be discovered in plenty by reference to past issues of the *FLORAL WORLD*.—*W. P.*—We are very sensible of your kindness, but unless the lists were sent from the houses direct, we could not notice them. Such of the trade who can do without the publicity of the *FLORAL WORLD* may enjoy their independence, the better for those who know the value of publicity among some seven thousand readers.—*W. W. F.*—A handful of quicklime thrown into a tub of well water will soften it by the time it has settled clear. Try what a few drops of hartshorn will do. We have nothing but hard well water for our greenhouse plants, and we have it pumped up in advance of use to be exposed for some time, and it modifies itself under the action of that mighty rectifier—the atmosphere.

* * We cannot guarantee replies by post in any case. Our garden is not open to visitors, nor have we time to accept the numerous invitations sent us to visit the gardens of friends. We are greatly obliged for numerous packets of seeds sent; but we do not undertake, in any case, to grow them. Numerous letters reach us every month after the Number is printed. We are most anxious to oblige, and we hope none will think that non-reply means inattention, as we attend to every letter that arrives before the 20th, and most carefully to those that come earlier.

WALTONIAN.—We are informed that Messrs. Hooper, of Covent Garden, supply mortars for the Waltonian at 2s. per box of 10.

when during successive soaking days it is a risk to ventilate at top. Then the opening of great glass compartments is a clumsy affair. Here is a range of houses, perhaps side by side, and when the side sashes are thrust out there is a loss of space which might be useful, if only for traffic to and fro.

Mr. Cranston does not patch up the old system, he offers us something altogether new. In the plate which accompanies this notice are sketches of three houses, that on the right a lean-to, that in the centre, a curvilinear span, that on the left a half span; the plate is crowded in order to show as many forms as possible in a given space, but taking them in detail, the reader will readily perceive what are the peculiarities of Mr. Cranston's system. Instead of rafters and sash bars, from the ridge to a side or a front wall, he prefers to bring the glass to the ground. Instead of one continuous length of wood and glass he divides the length into sections with horizontal ventilators between. These ventilators are called "radial ribs." They serve to strengthen the framework, and are essential parts of the structure. Thus, in the right hand house on the plate, there are three sections or a series of three compartments filled with glass, each compartment fixed at a different angle. There is no ventilation in these glass compartments, but where the lower edge of one overlaps the upper end of the compartment below it, runs a horizontal plate pierced with holes for the admission of air the whole length of the building. Thus in the structure we are now considering, there are four of these radial ribs, that is, one under the lower edge of each length of lights and an additional one under the ridge board. As these radial ribs are fixed horizontally, and resemble a half plank pierced with holes and set on edge between the successive compartments, they may be open at all seasons to allow of a circulation given through the house from top to bottom, but the cultivator has them all under control, for there is a valvular arrangement within, by means of which they can be partially or wholly closed, and thus air can be given *ad lib.*, without regard to rain, snow or

wind, just as the plants require it, according to the experience of the cultivator.

The centre house in the plate shows how, by this system, curvilinear roofs—generally unsatisfactory, and always expensive—can be formed of flat glass at a cheap rate, and with the same efficiency of ventilation, the curve being accomplished by the different set of each glass compartment. Here we have four compartments on each side and five ventilators, including the one at the ground line and the one under the ridge-board. We need hardly say that if we can have glass to the ground line at less cost than dwarf walls, it is a manifest advantage; we can always shade to subdue the light, but we cannot get light through brick walls or piers; and in the case of orchard-houses, where the borders are appropriated to strawberries and other low-growing plants, the system admits of the use of the whole breadth of the border, as there are no walls to intercept the light on the outer line of the borders.

The house on the left hand shows how head-room is obtained where the walls are already too low for a lean-to on the ordinary method of construction. The short side roof has a ventilator running the whole length of the plate, the action of which in admitting air is indicated by arrows. The other side of the house consists of three glass compartments and three radial ribs, the glass, as in the other cases, extending to the ground line.

The patentee has had in mind the interests of short leaseholders and tenants-at-will, and no part of the construction is fixed in the ground. In this respect Mr. Cranston's houses accomplish the same purpose as those of Sir Joseph Paxton, and offer a temptation to people who have been hitherto deterred from building by the fact that all fixtures on the soil belong to the freeholder. We strongly recommend a perusal of Mr. Cranston's book to persons about to build in their gardens, as if they do not avail themselves of his patent, they will gain much useful information on the requirements of greenhouses and the defects common to those now in general use.

EVERY MAN HIS OWN FIRE BRIGADE.

We have very great pleasure in calling attention to a newly-invented portable garden-engine, to which the designation of "Hydropult" has been applied very ap-

propriately. It consists of a double cylinder of brass, twenty-four inches in length, in which work two piston-rods attached to a handle for working. The lower end is

rior to any of the old double whites ; Countess of Derby, creamy white, with a large rose stripe down the centre of each petal ; very regular extra large size, very handsome ; Cup of Beauty, pure white, delicately streaked with pink, a large and finely-shaped flower ; Duchess of Buccleugh, bright carmine, with a stripe of white ; Egeria Hombert, brilliant rose, centre petals clearly veined, very beautifully imbricated ; General Lafayette, splendid crimson, large and good shape ; Gigantea, bright rose, good shape, great substance, and an immense flower, larger than Marchioness of Exeter ; Guglielma Ottolini, bright cerise, striped with white, imbricated ; Kossuth, bright scarlet, very full and admirably formed ; Mathotiana Alba, new white, very large, extra, fine shape, good foliage ; Pearl, snowy white, fine form, petals of great substance, beautifully imbricated ; Princess Frederick William, carnation striped, fine imbricated form ; Regina del Gigantea, red, enormous flowers, very showy, resembling Reticulata in size ; Saccoi Nova Vera, rosy pink, very double, resembling a fine rose ; Trackir, a splendid variety from Florence, the outer petals bright rose, and of a lighter colour in the centre, free bloomer, very large ; the plant is of a compact habit, and the foliage of a beautiful green ; Valtevarado, bright rose, beautifully formed, one of the very best ; Wilden, rose, fine shape, free bloomer, good foliage, one of the best.

OLD AND CHEAP CAMELLIAS.—*White*: Alba plena, the old double white, one of the very best ; Alba penetrata, white, finely imbricated ; Alba semiduplex, large and very handsome, semi-double, white, with showy anthers, an old and scarce variety ; Candidissima, white, large ; Fimbriata, pure white, fine form, and every petal beautifully fringed ; Ochroleuca, yellowish-white ; Virgine de Collebeate, white, with double rows of petals, the only camellia in cultivation of this form. *Striped*: Albertus (Chandler), carnation striped, one of the best of its class ; Benny de Boul, carmine striped and tipped, finely imbricated ; Catherine Longhi, rosy-carmine, with white stripe down each petal, fine showy flower and good form ; Countess of Ellesmere, creamy white, delicately striped, large and very fine shape ; Countess of Orkney, white, striped carmine, extra fine ; De la Reine, snowy white, very delicately mottled and striped with rose, extra fine form ; Double Striped, or Variegata, crimson, mottled white, blooms early ; Imbricata alba, white, striped and blotched with rose ; Jenny Lind, white, striped with delicate rose, very compact and free bloomer ; Jubilee, fine bluish-white ground, with delicate rosy-pink stripes and markings, very good form ; Princesse Bacchiocchi, rich carmine, striped with white ; Tentonia, rosy-pink, shaded and striped with white, sometimes produces flowers pure white, a very pretty variety ; Tricolor, semi-double, rosy-blush ground colour, with bright scarlet markings, very showy ; Targioni, white, striped with carmine.

Blush.—Adelaide, creamy blush, flaked and blotched with pink, very pretty ; Alexina, blush, very delicately marked with rose, exceedingly pretty ; Americana, blush-white, with rosy picotee-like markings ; Lady Hume's Blush (or Incarnata), beautiful creamy blush, very distinct, and everybody's favourite.

Carmine and Rose.—Archiduchesse Augusta, deep rose ground, shaded and veined with purple, a very singular variety ; Archiducea Giovanni, scarlet, with bright rosy centre petals, striped white ; Augusta Delfosse, velvety carmine, hexagonal shape ; Beali rosea, bright rose, small oval petals, finely formed, very beautiful ; Bruceana, deep rosy-crimson, very large ; Chandleri, brilliant crimson-red, sometimes beautifully mottled with white ; Colletti, deep red, covered with large white blotches ; Corallina (Chandler), brilliant crimson-red, large and very handsome ; Donckelaari, red, mottled with white, large semi-double flower, very showy ; Elegans (Chandler), splendid rose, occasionally beautifully mottled with white, an extra large and very handsome flower ; Formosa (Chandler), beautiful soft velvety rose, fine petal, excellent shape, and large flower, quite distinct from anything else, splendid foliage, and altogether one of the handsomest in cultivation ; Gem, bright carmine, with light pink centre, very large, great substance of petals, finely imbricated, expressively named, for it is truly a gem ; Hendersoni, shaded rose, imbricated, very pretty, and distinct form ; Imbricata, rich carmine, smooth waxy petal, occasionally very finely mottled with white, one of the best ; Lady Mary Labouchere, fine rosy-purple, good foliage ; Marchioness of Exeter, clear rose, large, and very handsome ; Mathotiana, rich crimson, very large, and extra fine shape, one of the handsomest and best ; Montironi, white, beautiful shape ; Optima, rosy-crimson, shaded with white, a magnificent flower ; Pictorum roseum, rose, centre petals tipped with white, large, and good form ; Queen Victoria, outer petals bright crimson, inner petals delicate rose, with white stripes, finely cupped flower ; Reine des Fleurs, rich orange-scarlet, very finely imbricated, a splendid variety ; Saccoi, very

TO CORRESPONDENTS.

CATALOGUES.—"Catalogue of New Plants offered for sale by Mr. Bull, King's Road, Chelsea." This interesting list has in it something to interest every class of cultivators. Mr. Bull is the appointed agent for the distribution in this country of the plants raised or introduced by M. Verschaffelt, of Ghent.—"Supplement to Carter's Vade Mecum, 1862," is a copious list of bedders, greenhouse, and border plants, arranged alphabetically, with notes on culture, etc. It contains many novelties, and should be consulted by plant growers, as well as by persons now occupied in selecting stock for summer decoration.

EXHIBITIONS DURING MAY.—Royal Horticultural Society, First Great Show, 21st. American Show, 30th. Royal Botanic, 7th, 28th. Royal Oxfordshire, 22nd. Crystal Palace, 23rd.

THE REASON WHY, ETC.—*W. C. N.*—We heartily reciprocate your kindly feeling, and join in your hopes as to the far future. You will find gardening, so far as your case enables you to pursue it, of immense benefit during your illness, out of which we wish you a happy issue by the good guidance of the Great Physician. Your queries have occasioned us some agreeable thought. You ask if the reason why should not be given along with instructions to do this or that. Now, in plain truth, if we were always to give the reason why, we should have no space for instructions at all. The simplest job imaginable may be made the text for endless philosophical disquisitions, and an unpretending periodical is scarcely the proper medium for dry analyses of vegetable physiology, and as one of our most valued horticultural friends says, "Never give a reason why: if you want people to do things well, teach them empirically; if they will have a reason why, they will search for themselves, and discover it better than it can be taught in every special case that arises." We are not bound to his doctrine, but "there is summat in it." As to polyantheses, when they show the thrum, so that the tube is nearly filled up, they are more beautiful than pin-eyed flowers, which show the pistil only. Compare the two side by side, and you will see that the florists are right. If you have any pin-eyed flowers that are otherwise good, keep them by all means and hope for something better when you breed from them. If you send the pin-eyed flowers to a show the judges will condemn them as they are bound to do, for the simple reason that they do not conform to the accepted standard of properties. The cinerarias changed colour through some peculiarity in their culture. Too much heat and too much light will destroy their colours, and yours have perhaps had no shading during the recent sunny weather. But are you sure that the white self is from a violet-tipped variety, it is very likely from a white through some accidental change of tallies. Keep the auriculas; they will probably bloom better next year. These things, with pansies and other highly herbaceous plants, rarely bloom satisfactorily the first season in the hands of amateurs through being propagated hard and sent out in a weak state. An example of the necessity of patience is now before us. Last spring we raised about 300 Belgian daisies from seed supplied by Messrs. Henderson, St. John's Wood. The plants were in due time planted in a border, and when they flowered they were downright trash. A certain

few were saved, because they promised well, and this season those few have produced most beautiful blooms, richly coloured, large and thoroughly double. The reason why is that in the first case they bloomed before the plants had acquired sufficient vigour; now they have stood a year on the ground and are full of pulp, and throw flowers that become them. If we had been in such haste as some people are, we should have condemned the seed as worthless, but we knew the test was not a fair one, because the seed was sown in spring in heat, and the plants were hurried into bloom by hot weather before they had strength to bloom properly.

LAWSON BLACKBERRY.—*Amator Florum.*—A deal of patience, time, money, labour, and hope are wasted in raising things of this kind from seed. You had better get a plant and put it out on a bed of rich loam, and increase it either by laying down the rods or allow it to increase in its own way by extension of the stool. The proper time to sow the seed is the end of June, not in the open ground, but in a seed-pan, which should be covered with a square of glass. Sow very thin, in order that the young plants may grow two or three inches high without touching each other; then plant them out one foot apart in a bed of rich soil, give plenty of water, and keep shaded for a week. They will be strong enough before winter, and next year ought to throw up vigorous shoots, and give a few fruits. At the end of the second season they will need transplanting four feet apart every way; it is a tremendous grower, and in its habit midway between a raspberry and a bramble. Your notes on cinerarias will, no doubt, be acceptable.

MOSES IN A FEBRUARY.—*An Old Subscriber.*—The only book we can call to mind on the subject, is an old one called the "Alpine Garden," by James Lothian, where published we cannot say, and perhaps out of print. Stark's "Popular Hand-book of Mosses," published by Routledge at 7s. 6d., is full of valuable information, and will enable you to identify all the handsome mosses that are worthy of culture. Sandy peat, fragments of sandstone and limestone, rotten wood, and broken bricks are the materials on which mosses are most likely to flourish. The place should be shady, and should be watered with artificial showers all the summer. A rockery so treated will generally produce its own crop of mosses in time; the places where they show themselves should not be disturbed.

SPOTTED ROSE LEAVES.—*T. L.*—The microscope reveals a dense growth of fungus on your rose leaves, and the rapid spread of it proves that circumstances were favourable to fungi, probably a damp atmosphere when it first began, and woody rubbish in the compost not quite rotted. Roses are particularly liable to attacks of fungi both on the leaves and at the root, and one fruitful cause is the presence in the soil of chips of wood, dead stick, and other ligneous matter not thoroughly decomposed. Amongst these bits of half rotted wood fungous threads are developed, which appear like gossamer films, and as soon as these threads (or mycelium) extend to the roots of the rose they sooner or later kill it. We can only suppose that you potted your plants in compost containing fragments of wood of some kind or other, swept up with the leaves or mixed with the manure.

DAFFODIL OUT OF BLOOM.—*L. B. K.*—You forgot

to say what sort of daphne, and what you wish to do with it hereafter. How are we to advise, if we do not see the patient, at least we ought to know its name, and something of its intended destiny. We flower a few *Daphne* odora and its varieties in pots, and when out of bloom turn them out, pick away a little of the old soil from the outside of the ball; repot them in the same pots, and fill in with turfy peat torn up, and all the fine stuff removed, and over the top spread some very old dung and sweet leaf-mould; they are then put in a bed of coal-ashes, and must take care of themselves till the end of August.

LILIIUM WITH SPOTTED LEAVES.—O. M. H.—There may be many causes for such appearances. Either the plants are growing in undrained soil, or there is too large a proportion of insufficiently decomposed manure in the soil, or what is most likely, they have been excited too early into premature growth, and have then become too cold through the long stretch of sunless weather we have had this spring. If the drainage of the pots is defective, shake out the plants, and repot in a mixture of equal parts peat, loam, and leaf-mould, with one-sixth sharp sand, and put them in a very gentle heat to recover.

SPERGULA PILIFERA.—Encouraged by Mr. Shirley Hibberd's glowing description of the *Spergula pilifera*, in the July number of the *FLORAL WORLD* of 1860, I bought some tufts of it of Messrs. Henderson, and had them planted on a small plot of ground surrounding a tomb in Kensal Green Cemetery. They were planted in July, 1860, according to their directions, as to the preparation of the ground, and about a foot distant from each other, and for a time seemed to be doing well. I observed, occasionally, some pieces pulled out and lying dead, and this the gardener at the cemetery, as well as myself, attributed to the birds having pulled them out of the ground, to build their nests with. I then had worsted threads twined over it, and thus protected, it continued to thrive through the following spring. I went abroad last June, and the *spergula* tufts having joined together, and covered the piece of ground I intended to be covered, I took away the threads, as they looked unsightly. I considered, too, that the building season being over, and the plants more firmly rooted, there was not much to be feared from the birds. I was greatly disappointed, however, to find on my return in October, instead of a nice green smooth plot, the whole of the *spergula* apparently dead, with quantities pulled out of the ground lying about in all directions. I went directly to Messrs. Henderson, who gave it as their opinion that the worms, and not the birds, were the cause of this strange appearance, and I was led to agree with them, as there were many worm casts, and the place was very wet. They recommended that the *spergula* should be beaten flat with a turf beater, there being no room for a roller, and that it should be watered with lime water. This was done according as they directed, and in a few days afterwards, when I saw the place again, there was nothing but a smooth surface of earth, without a vestige of the moss. There appears no prospect of its recovery, as it has remained exactly in the same state since last October. I shall feel greatly obliged if you can explain to me the cause of my disappointment, and also give me instruction for its future management, as I greatly prefer it to turf in the situation I have named. I inclose my card, with my town address, and beg to subscribe myself F. S. K. [We have repeatedly said that worms, and weeds, and sparrows, were enemies to *spergula*, and to

succeed with it measures must be taken against those enemies. It was hardly a wise choice to plant it in a place where you could have no control over it; any other plant might perish in a cemetery, if it required occasional attention; but even now, if left alone, it will come up and look beautiful, as the ground is no doubt full of seed and live roots.]

GOOSEBERRY CATERPILLARS.—Seeing a remedy for destroying caterpillars on gooseberry trees, in the April number of the *FLORAL WORLD*, I beg to say for the last two or three years we have been quite successful in keeping them entirely off, by planting beans between the bushes in February—the common Windsor bean. We have never had a caterpillar since we adopted this remedy; and though now too late for sowing the seed, some plants might be removed where required—that is, between the gooseberry bushes, and these supply the house with beans for the first crop. You may be glad to have this information experience has confirmed to be good. Why it acts I do not know. Camellias are now being turned out of doors; when should a portion be taken in again, to secure an early bloom? Is Jackson's a peculiar camellia in any way? After having a plant some years, and treated like others, this is the first year we have had flower-buds; they came large, and fell off without one single flower coming to perfection.—S. C. [Jackson was raised by M. Verschaffel, of Ghent, and has all the good habits of the Ghent seedlings. The flower-buds of your plant probably fell off through the plant having got dust-dry in winter. It would be less harm to camellias to be dried up in July than in January; but during frost, when people are afraid to water, it is often the case that camellias are spoilt for the season. Begin to house the camellias in September; until that time they should be kept hard and quiet.]

A WHITE BENDING AND BORDER HYACINTH.—I have for some years grown a white hyacinth, which ought, I think, to be more generally known, and may perhaps interest you. I know nothing of its parentage, but imagine that I had it among some Dutch bulbs. It is always in flower with the crocus, and is over before the other hyacinths are in bloom; this year it was in flower the first week in February; I use it as an edging for a spring border, and as it propagates tolerably freely, I have now sufficient to go round three or four large borders. The flower, as you will see by the small portion sent, has no pretension to a show flower, but is single, narrow petalled, very erect, white, and fragrant. The bulb is small and round. I shall be glad to know if you are acquainted with it, and shall be glad to send you bulbs by any conveyance you will direct. [Send half a dozen to us at Stoke Newington, London, N., when you take them up.] I should also state that it is so perfectly hardy, that I never take up the bulbs, but plant over them for the summer.—G. P.

VARIOUS.—C. H.—We cannot name seeds; yours are like those of a tall-growing vetch which is cultivated in Barbary, and of no value in English gardens.—T. E. P.—The blue flower is *Anemone appennina*, a gem in its way.—J. M., *Stourbridge*.—Your silvery plant is *Cerastium tomentosum*.—H.—Probably the geranium you mean is the old Globe Compactum. Purple King verbenas, and variegated mint, will do very well together, provided the mint is kept well pinched in, and the Carmine Nosegay used for the inner circle, as its habit is taller, and more diffuse.—E.—The "Powdered Bean" is *Cineraria maritima*, which is also known by the elegant cognomen of "Dusty Bob."

THE FLORAL WORLD

AND GARDEN GUIDE.

JUNE, 1862.



LOWER SHOWS have succeeded one another with such smart rapidity during the past month, that it has been no trifling task to keep pace with them, especially as innumerable novelties of more than ordinary merit have been introduced to public notice. At the Royal Botanic, on the 30th of April, rhododendrons, roses, pelargoniums, pansies, cinerarias, and ferns were the principal subjects, and in every collection there was something worthy to be remembered as of special value. At the same place,

on the 28th of May, azaleas and pelargoniums took the lead; but Japanese shrubs, variegated-leaved plants, and orchids divided attention with them, and on every hand the eye encountered something new.

The great *fête* of the month was that of the Royal Horticultural on the 21st, where the grandest exhibition of our times was rendered additionally attractive by its proximity to the Great Exhibition, and its being held in a garden about which curiosity has been on the alert as to what would be its general aspect in the second season of its establishment. It was the first leisurely view we had had of the new garden this season, and we explored it under cover of an umbrella, while the rain poured down in that genuine English style to which we are accustomed when any great spectacle is to be seen out of doors; but the weather did not interfere with the success of the undertaking, the rickety tents and the great conservatory were crowded to excess with a fashionable company, and exhibitors had no complaint to make that their contributions were not seen. What with the three military bands, the wonderful display of flowers and plants, the splashing of the cascades and fountains, the rustle of endless miles of silk and satin, chronic *ennui* would have been cured, and the most exhausted seeker for a new sensation gratified to the utmost. At the present time the garden has a thin, bare appearance, and such must of necessity be its fate till the trees grow to some size; but it is beautiful, nevertheless, and complete in its details as an example of the architectural style, combining French and Italian with truly English features. The American beds

were in full splendour, the kalmias especially loaded with bloom, the turf fresh and sound, the polychrome designs at their best, owing to the new spring growth of the recently-clipped box which marks the outlines; and the two great crinoline domes of the International Exhibition are acceptable elements in the prospect. Fellows and friends of Fellows should visit the gardens as early as possible now to see the splendid exhibition of American plants by Messrs. Waterer and Godfrey, which, though not professedly opened till the 30th of May, was in fine condition on the 22nd, the Pontic azaleas being then loaded with their intensely vivid yellow and scarlet-orange blossoms, and most of the hybrid rhododendrons full out. By this time the great composite bed at the head of the garden is planted with its summer stock. We regret that we could not get particulars of the planting of any of the great gardens in time for this number of the *FLORAL WORLD*, for, strange to say, though the weather has been warmer than the average, none of the great gardens were planted until too late for us to furnish our readers with detailed information.

The exhibition at the Crystal Palace on the 24th was in great part made up of the plants shown at Kensington three days before; but there were many additional contributions, and the show attracted by its own intrinsic merit. The garden at Sydenham is in beautiful trim this year. The beds of tree pæonies are blooming superbly, and we never saw the rhododendrons and kalmias in more beautiful condition. The roses on the mount promise to make a grand display shortly, and everywhere the climbing and creeping plants are now showing bloom, their characters having become thoroughly established, and at home in their several positions. We shall now, as on previous occasions, name a few subjects in each of the principal classes, as they severally claimed our attention at various of the exhibitions.

AZALEAS.—At the Kensington exhibition these were shown in a huge tent on grass platforms, so arranged that the visitor had from almost any point an uninterrupted view of the whole of the collection, the broad gravel walks descending by a succession of slopes towards the centre, and the beds being formed to intersect those walks, so that the flowers were either immediately under the eye, and could be closely inspected, or they were elevated above the line of hats and bonnets. The azaleas were mostly grouped above the level, and the best plants were pyramids of huge size, evenly covered with bloom from top to bottom. Mr. Turner, of Slough, was first in the class for nurserymen: his plants were—Murryana, Iveryana, Præstantissima, Criterion, Chelsoni, Glory of Sunning Hill (a double kind), Extrani, alba magna, and Juliana. From Messrs. Veitch came Empress Eugénie, Fentoni, a small-flowered vivid orange-scarlet; Broughtoni, Magnificent, a good white; Rosea superba and triumphant. Messrs. Fraser, Cutbush, and Gaines had variegata, violacea, superba, carnea, Roi Leopold, optima, Mrs. Fry, a bright rosy purple sort; Exquisite, Sir Charles Napier, symmetry, coronata, and rosy circle. The principal collections of azaleas grown by amateurs came from Messrs. Green, Carson, Kaile, Peed, and Page. In these were Glory of Sunning Hill, Gledstanesi, Murryana, Iveryana, Broughtoni, Carminata, Delicata, Beauty of Reigate, Præstantissima, the bright yellow *sinensis*, Corq-

nata, Variegata, Symmetry, Perryana, Sir Charles Napier, Speciosissima, Exquisite, Criterion, Barclayana, maculata, and Fielder's White. Mr. Ivery, of Dorking, furnished a collection of tall standards, in which were Iveryana, white nicely flaked with pink; Adolphe, semi-double rose; Duchesse Adelaide de Nassau, a fine showy kind; Criterion, Coronata, Duc de Nassau, large vivid rose; Roi Leopold, and Perfecta elegans, orange-scarlet. A beautiful seedling azalea, named *Elegantissima*, white striped with pink, from Mr. Williams, was much admired, and may be considered a valuable acquisition.

GREENHOUSE AND STOVE PLANTS.—These collections are always attractive, and there never were finer plants shown than at the Royal Horticultural and Crystal Palace, where the same plants and the same exhibitors were, for the most part, associated. In the open class for 15 at Kensington, Mr. May, gardener to J. Spode, Esq., Hawkesyard Park, Rugeley, was the winner of the first prize of £20, after his plants had made a journey of upwards of one hundred miles on the morning of the show. All the plants in Mr. May's, too, were such as should be found in every conservatory, and most of them are well adapted for amateur culture, and for that reason we apprehend their names will be of value; they were—*Azalea* Criterion and Stanleyana, *Gompholobium polymorphum grandiflorum*, trained in the form of a bush and extremely well flowered; a huge *Hedera tulipiferum*, loaded with carnation striped white and rich brown blossoms; an excellent plant of *Pimelea Hendersoni*, *Epacris miniata grandiflora*, *Chorozema Henchmanni* and *varium nanum*, an Everlasting or two, *Ixora coccinea*, *Eriostemon pulchellum* and *neriifolium*, and *Boronia serrulata*. Mr. Peed took the second prize of £15 with *Allamanda grandiflora*, covered with clear pale yellow flowers; *Ixora coccinea*, the Box-leaved *Eriostemon*, a handsome *Chorozema cordatum splendens*, *Azalea* Criterion, *Pimelea spectabilis*, *Erica depressa*, the lilac blossomed Heath-leaved *Tetralthea*, and *Pimelea Hendersoni*. Mr. Whitbread was third (£10) with the finest *Erica elegans* perhaps ever seen, pyramidal in shape, and externally loaded with blossoms; *Pimelea spectabilis*, *Azalea variegata*, finely bloomed; *Ixora coccinea*, *Eriostemons* of different kinds; *Erica Cavendishii*, *Clerodendron splendens*, *Polygala Dalmaisiana* and *Epacris miniata*.

RHODODENDRONS.—At Kensington Mr. Noble was first and Mr. Standish second. In the first lot the following were the best—*Aclandianum*, spotted rose; Lord Palmerston, crimson, a free flowerer, producing large and fine trusses; Lord Granville, and Duke of Cambridge, two other beautiful bright crimson kinds; Lady Palmerston, lilac, stained in the upper petals with greenish yellow, and prettily spotted; and Floretta, a small crimson variety with whitish throat. In Mr. Standish's lot the following were the best—*Floribundum*, violet-shaded crimson, and a most profuse bloomer; Dragon's Blood, a rich red kind; elegans, pink shaded rose; Chancellor, a large light flowered sort with a yellow blotch in the upper petals; *Stellatum*; Star of England; Ruth, a good light variety; Hesus, a bright crimson sort; Sambo, deep claret; Madame Titiens, rose; Dr. Hogg, rose, large and showy; Prince Arthur, dark rich mulberry; Standish's Perfection, white with chocolate spots, the finest shaped flowers we have yet seen

of any hybrid rhododendrons, and one that will take the lead for exhibiting. There were many reds in both collections, but they were, for the most part, so much alike, except the few we have specified as distinct, that it would matter little which of them was selected, especially as they were all good.

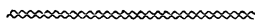
ROSES.—These have been shown in the greatest profusion and perfection this season, and nowhere better than at the Crystal Palace, where the specimens in pots were most judiciously placed. At Kensington Messrs. Lane were first, Mr. W. Paul second, Mr. Francis third. The following were selected as the best at the several shows of the past month:—Lamarque, Jules Margottin, Souvenir d'un Ami, Charles Lawson, Paul Perras, Duchess of Sutherland, Chénédolé, Coupe d'Hébé, Comtesse Mole, and Louise Peronny, Baronne Prevost, Souvenir d'Elise, Vardon, a good light kind; Charles Duval, Lord Raglan, Vicomtesse Decazes, Aubernon, Madame Willermoz, Gloire de Dijon, Madame Hector Jaquin.

NEW ROSES.—Mr. Paul has shown President several times this season, and it has always brought him honour. T. La Boule d'Or, B. Catherine Guillot, H. P. Duc de Cazes, Gen. Washington, Jean Bart, John Waterer, Madame Furtado, Madame Melanie, Princess Mathilde, and Beauty of Waltham, are the very best of recently introduced roses, and should be added to every collection for blooming in the forthcoming autumn.

PELARGONIUMS.—Messrs. Turner, Dobson, and Fraser have been the chief trade exhibitors, and Messrs. Bailey, Weir, and Shrimpton the principal amateurs, who have shown collections of pelargoniums. The following we thought the best:—Sir Colin Campbell, Fairest of the Fair, Prince of Wales, Symmetry, Viola, Madame Furtado, Sunset, Vestal, Roseum, Rose Celestial, Leviathan, Aurelia, Fair Helen, Etna (this is, perhaps, the most dashing pelargonium in the whole of the lists), Amy, The Bride, Desdemona, Sanspareil, Osiris, Mr. Marnock, Lady Canning, Ariel, Nonsuch, Flora, Conspicuum, Saracen, Peacock, Candidate. *Fancies.*—Celestial, Acme, Clara Novello, Lady of the Lake, Madame Sontag, Negro, Decision, Rosabel, Delicatum, Attraction, Queen of Roses, Perfection, Evening Star, Lady of Lyons, Modestum, and Madame Rougère. *Seedlings.*—The best were Conflagration, Improvement, and Belle of the Ball, from Mr. Nye; Conqueror of Europe (zonale), from Mr. Williams; Nesfield (zonale), from Mr. Turner; Waltham Pet from Mr. William Paul, and Royal Albert from Mr. Hoyle.

VARIEGATED LEAVED PLANTS.—Messrs. Veitch, Williams, Salter, Bull, Standish, and Carter have exhibited endless varieties of Caladiums, Begonias, Coleus, Alocasia, etc., etc. The most noticeable for general usefulness were the collections of hardy variegated plants from Mr. Williams of Paradise Nursery, Holloway, and Mr. Salter of Versailles Nursery, Hammersmith. We find entered in our note-book as likely to interest our readers the following:—*Artemisia vulgaris*, var., a trifle prettier than Lady Plymouth Geranium, quite hardy, and a compact grower. A plant of this in Mr. Salter's lot was wholly white, not a particle of green anywhere visible. *Scrophularia nodosa*, var., like a small edition of the variegated hydrangea; a very pretty and useful plant

for bedding. *Trifolium arvense pictum*; Mr. Salter had some pots of this charming old chocolate-leaved clover. With us it grows as freely as a weed, and makes beautiful carpetings on the fronts of rockeries. *Alyssum saxatile*, var.; this is a variegated variety of the yellow alyssum, the well known "variegated alyssum" is a white flowering plant. *Tussilago farfara*, var., as beautiful in its way as *Farfugium grande*, though very distinct in character; a truly fine variety for decorative purposes. *Oxalis corniculata rubra*; this is like the dark leaved clover, and makes a pretty object for pot culture, but by many shades too dull in tone for any bedding purpose, unless some sort of nearly black surfacing were required. *Jasminum officinalis aurea*, rich as gold fringe, and a fine thing for the greenhouse. *Ballota nigra argentea* and *aurea*, both good for colour and habit, and their appearance that of gold and silver lace. *Polemonium album*, var.; with elegantly toothed leaves, prettily edged with cream; a lovely plant for rockwork. *Salix cuprea*, var., a beautifully variegated willow, well shown by Mr. Salter, trained in the form of a balloon. *Funkia cucullata*; this is a plant with grand ovate leaves, heavily blotched with creamy markings. *F. ovata*, *undulata*, and *striata*, all good in their variegated forms, and very distinct to make a tropical sort of effect for a small outlay. *Arum Italicum*, pretty sagittate leaves, marked with elegant lines. *Rubus corylifolius*, var.; *Ægopodium podagraria*, var., two more useful things, distinct in character. *Plantago major*, a deep purple bronze variety, resembling *Perilla Nankinensis*.



MR. CRACE ON THE ARRANGEMENT OF COLOURS.

Avoid blazing contrasts of colour, such as bright red next bright green; or bright blue next bright yellow; such contrasts are not harmonious: let one of the two colours always be subservient to the other. It is not so much what colour a material is, but how that colour is made to appear. It is necessary to bear in mind that all colours have their complementaries, which add to or detract from the beauty of the adjoining colours, according to what they may be. Thus, the complementaries of red are green, of blue are orange, of yellow are violet. If you cut out pieces of gray paper in an ornamental form, and stick a piece on each of the three colours I have named, you will find, in a shaded light, the gray will be fully tinted by the complementaries of these colours. But you cannot lay down precise rules. An experienced artist can bring any two colours together by properly modulating them. Nothing is so charming and so refreshing to the eye

as an harmonious arrangement of colours. They are "like a sweet chord of music to the sense." The hand of Nature never errs, whether it brings together scarlet and crimson, as in the cactus; scarlet and purple, in the fuchsia; yellow and orange, as in the *calceolaria*; or the colours in the varied plumage of exotic birds—the harmony is always beautiful, ever perfect. I will suggest a few contrasts:—

1. Black and warm brown.
2. Violet and pale green.
3. Violet and light rose colour.
4. Deep blue and golden brown.
5. Chocolate and bright blue.
6. Deep red and gray.
7. Maroon and warm green.
8. Deep blue and pink.
9. Chocolate and pea green.
10. Maroon and deep blue.
11. Claret and buff.
12. Black and warm green.



EARLY FORCING VINERY.

In a vinery intended for very early work, the vines should be so planted that the roots may be made to grow in advance of the branches, rather than the contrary, as is the case when an attempt is made to force any ordinary vinery, and where no precaution has been taken to secure the before-named effect. Sometimes it is accomplished by covering the borders with fermenting material, by which a vast amount of labour is incurred with (very often) but imperfect results, as heavy rains and falls of snow seriously interfere, and render the gardener's duties very irksome, and the production of a full crop of fruit a very hazardous matter. It is far better, therefore, to make sure work of it, by beginning right at first, which I flatter myself would be the case if the accompanying plan be faithfully carried out, and in which it will be seen that the vines are planted inside the house. The principal part of the border is also in the house, and that which is not so, is covered by shutters, or lights; if the latter, all the better, as the gardener would find the space inclosed above the border useful for a hundred purposes, without interfering with the vine roots, such as wintering salads, hardening off plants, etc.

The border is placed upon a thick layer of open stones, burs, or bricks, by which all stagnation of water is most effectively provided against; drain-pipes, three or four inches in diameter are also laid across the border under every arch formed in the front wall, and consequently under every vine, as these arches must be set out so that each vine has an opening for its roots to pass out by, into the outside border.

The drain-pipes will convey the warmth from the hot-water pipes laid under the border, and also from the flue at the back, throughout the mass of rubble, from which it will rise to the soil of the border. A circulation of warmed air is by this arrangement secured to the interior of the house, which will greatly benefit the inmates, and often in cold weather render the opening of the ventilators unnecessary. Should too much air be admitted by this means, a plug could be made to drop into the end of some of them, at the end terminating in the outside border, marked A on the plan.

The borders being all covered, and the means of warming them provided, the roots of the vines could be got into a state of

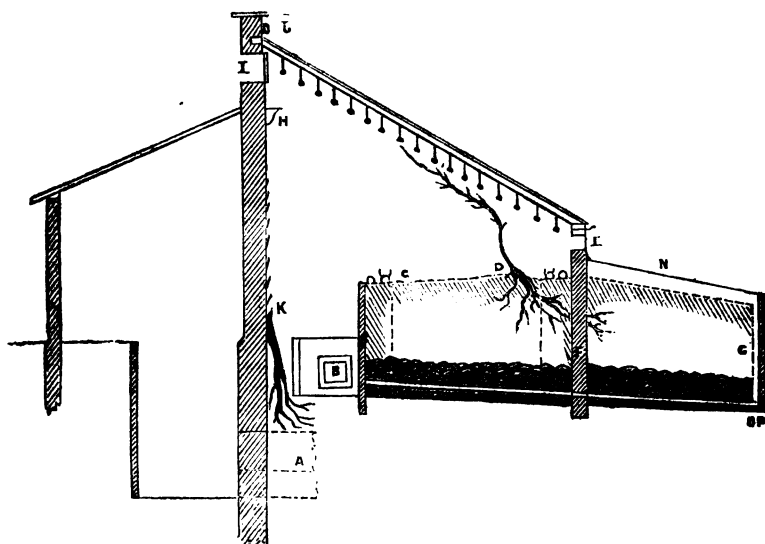
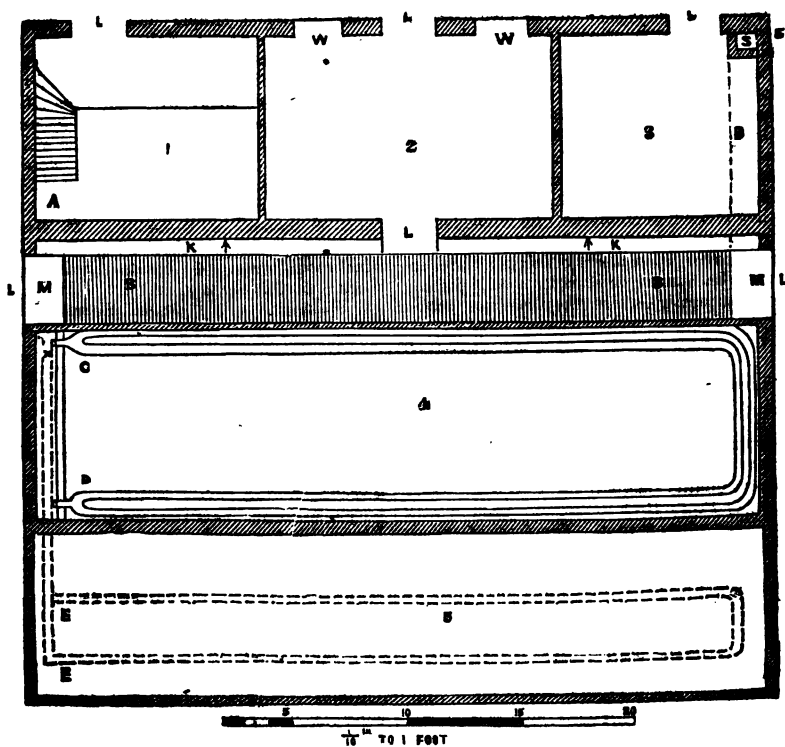
activity before the house is finally closed. As these borders would entirely depend upon the gardener for their supply of moisture, it must be given with no niggardly hand, as the vine, when in growth and carrying a crop of fruit, requires plenty, which should not be given quite cold; it should also occasionally contain a good dash of the drainage from the stable or cow-house, to keep up the fertility of the soil.

The most economical roof for such a structure has already been described in the *FLORAL WORLD* (p. 25, 1860), also, instructions for making vine borders.

It may be as well to say that there is a design in every arrangement of the plan; the builder is, therefore, recommended to carry it out to the letter; for it is a great mistake to suppose that a satisfactory result can be arrived at when the means thereto are not well considered. Many gentlemen are chagrined and gardeners put to their wits' end through the bungling of incompetent builders. A house to be thoroughly efficient should be built for a specific purpose, and when that purpose is determined, a satisfactory plan should be procured, and the builder be compelled to work to it. It is *not a fact*, as is often supposed by novices in the art of gardening, that a house may be used with the like success for a variety of purposes, especially when hard forcing is required; therefore, consider first for what the house is to be used, and then build and heat accordingly.

REFERENCES TO CUTS.

A. Hot-water boiler. B. The smoke-flue carried along under the floor, and covered over with three-feet-wide iron-grating to form the walk. c. Flow, and, d. return hot-water pipes, four inches in diameter, with evaporating troughs cast upon some of them. e. e. Flow and return two-inch hot-water pipes, fitted with stop-valve, to be used for warming the border. f. Front wall of vinery built on arches as high as the dotted lines go. This wall must be fourteen inches thick up to the surface of the border, above that nine inches thick. The walls on plan being drawn to a scale of one-tenth of an inch to a foot, it will not be necessary further to specify them. g. Pipe drain, which passes down the front of the border, through the rubble that forms the foundation of the border, to flue B, to be open at both ends, which will cause a circulation of warm air under the



border, and one of these drains should be laid under each arch. *κ*. Shelf for strawberries, etc. *ι*. Ventilators, twelve inches deep at front, and eighteen inches deep at back, of house; as many of these ventilators as can be possibly got in should be used, indeed, there should only be sufficient brick-work between them, for them to slide over when open, thus opening exactly one-half of the length of the house, both back and front; they should be connected the whole length by means of an iron rod, and should slide in grooves upon metal bearings; they can then be opened or shut by a cord passing over a pulley where they are *not within*

reach, or by a simple handle or knob, *where they are so*. *ς*. Roller, and blind of canvas; in early forcing this will be necessary, both for protection by night, and occasionally for shade by day, especially when the vines are resting in July and August. *κ*. Border, eighteen inches wide, for fig-trees. *λ*. Doors. *μ*. Flag stones against doors. *ν*. Shutters over outside border. *ρ*. Water drain laid along the front of border. *σ*. Chimney. *ω*. Windows. 1. Stokery. 2. Potting-shed. 3. Mushroom-house. 4. Inside border for vines. 5. Outside border.

Whitwell.

H. HOWLETT.

A SELECTION OF PETUNIAS FOR BEDDING.

QUEEN: Rich rose, with white eye; cannot be beaten as a rosy pink, and has every quality requisite for a bedder. **Lady Emily Peel**: Rich violet, rose ground with a clear white throat. The form of this is really exquisite, and either in beds or pots it is a gem. It grows freely, and is a most abundant bloomer, and altogether surpasses Countess of Ellesmere, Marquis de la Ferté, and Shrubland Rose. **Rosy Circle**: Peachy rose, pure white throat, dwarf and compact habit, and altogether a true bedder. **Fascination**: Brilliant rose, white throat, good habit; endures drought well, and the best of the new rose-coloured bedders for hot sandy soils. **Empress of the Crimson**: Bright crimson, very large and showy, but the flowers flop about for want of substance. **Ernst Benary**: Rich violet purple; very large, fragrant, and free. **Jeanne Pécheur**: Dark lilac, shading off to blue; very effective. **Madame Annette Nicholas**: White, mottled with delicate rose. **Magna coccinea**: Large crimson; a very showy bedder, but will not please fastidious eyes, having a loose spreading limb. **Maid of Kildare**: Pure white, very full and good. **Manteau d'Evêque**: Violet slate, very bright and effective. **Ornement des Jardins**: Reddish purple, black throat; fine. **Prince Albert Improved**: Deep crimson, free. **Queen of Whites**: The best white for beds. **Silver Shield**: Silvery white; good for pots or beds; a very neat and pleasing flower. **The Bride**: A really good white.

SINGLE PETUNIAS FOR POTS.

Graciosa: Blush, dark eye, red crimson belt round the throat; a very beautiful variety, and may be used in beds.

Pizarro: Lilac rose, dark eye, margined with violet red lines; fine form. **Annie Salter**: White, richly veined with dark purple crimson. **Coerulea grandiflora**: Blush, lilac ground, deep violet centre, purplish blue veins. **Dr. Andry**: Amaranth crimson, striped with white. **Exquisite**: Best white for pots. **Coquette**: Not easily described, but may be said to have a varying ground colour of white or purple, marked with violet blue bars from the centre outwards. No grower of petunias should be without it. **Madame Henry Jacotot**: Rich purple ground, belted and blotched with white; a very curious fancy flower, and blooms early in pots. **Mademoiselle Annie Perrot**: Rosy lilac, crimson centre; thoroughly good for either pots or beds. **Marechal Canrobert**: Violet rosy crimson; very lively and attractive. **Purple Model**: The best purple self for pots.

DOUBLE PETUNIAS FOR POTS.

An immense number of absolutely worthless varieties of double petunias are sent over every season from the Continent, and the catalogues get crowded with names that mean nothing, or at least nothing creditable to either raisers or vendors. At some of the French and Belgian nurseries, every seedling is named for the English market, and English nurserymen enter these varieties indiscriminately in their catalogues, and endeavour to screen themselves by the saving clause, "the descriptions are those of the continental raisers." We have bloomed an immense number of varieties of double petunias during the last five years, and we cannot now make a long list of really desirable kinds, owing to the large preponderance of rubbish. We

have selected a few that are really first-rate, and growers can add to them such as they really admire when they see them in bloom.

Antigone: A fine double white, full and fragrant, and leaves *Imperatrice* far behind. **Atro coccinea:** Rich crimson; very fine. **Harlequin:** A good fancy purple, striped with white. **Leviathan:** Purple crimson; a massive flower, most effective if the plants are grown to a good size before being allowed to bloom. **Marginata monstrosa plena:** Mauve purple, margined with green; immensely large and very novel; will not disappoint any one. **Striata alba:** Rich violet purple, splashed with white. **Annie Kien:** Semi-double, the guard petals dark purple, margined with white; the double centre white;

habit dwarf; blooms early and profusely. **Inimitable flore pleno:** Centre petals richly flaked with white and purple; outer petals purple, tipped and boldly flaked with white; a very grand variety for the conservatory. **Inimitable Eliza Matthews:** Differs slightly from the above in its markings, and is quite as good. **Imperial Crimson:** Rich and effective. **Red Cross Banner:** Purple crimson; better form than many others of the same class of colour. **Punctata striata:** Blush, with rosy pink spots and lines in centre, green margin. **Inimitable grandiflora:** Rich purple centre, running into a broad purple flake midway of each white lobe, leaving parallel side-belts and a white outer margin. The flowers vary on the same plant, but they are always boldly marked and attractive.

ON THE CULTURE OF AQUATIC PLANTS.

THE aquatic plants of the Eastern hemisphere, from their elegance and beauty, rank as objects of no mean interest in the catalogue of vegetable forms. Some of them are allied by their similarity of structure to the *Algæ*, as *Zostera* and *Aponogeton*, in the natural order *Fluviales*, which may be mistaken for subjects in that inferior class of vegetable organization; while, on the other hand, the noble tribe of *Nymphæa* stands unrivalled for the beauty of the several species of which it is composed. The beautiful blue of *Byblis linifolia*, the rich tinted brown of *Vallisneria spiralis*, the delicate pink of *Nelumbium speciosum*, and the highly fragrant perfume of *Aponogeton distachyon*, have each and all a deep and peculiar interest among other objects which occupy the wide domain of Nature.

The different species of aquatic plants belong to no particular order of the vegetable system, but are dispersed through the principal divisions of the natural arrangement. They are indigenous to most parts of the known world; but the British species form very conspicuous and interesting plants to deck the hardy aquarium.

Many of the species which are most difficult of culture are natives of the tropics, and require a congenial atmosphere (varying from 55° to 70° artificial heat, and up to 90° solar heat) to disclose their flowers. As they require intense light, they should be placed near to the glass. Where cisterns are used, a waste pipe is requisite to take off the water when becoming injurious to growth.

STOVE AND EXOTIC SPECIES.

LIMNOCHARIS HUMBERTII belongs to the natural order *Commelinæ*; its name is derived from *limne*, mud, *charis*, grace. It thrives in retentive loamy soil, and produces an abundance of its bright yellow three-petalled flowers, if planted in a cistern or tank where a good heat is maintained. Introduced from Buenos Ayres in 1831.

NELUMBium SPECIOSUM, from *nelumbos*, its name in Ceylon, belongs to the natural order *Nymphæacæ*. The delicate colour of its bright pink flowers make it a desirable object. It requires to be kept dry after the blooming season, and again excited about the beginning of February. The fruit of *N. speciosum* is supposed to be the Egyptian bean of Pythagoras. It grows in great luxuriance in the ditches, in all the hotter countries of the East; and requires intense heat to expand its flowers.

BYBLIS LINIFOLIA, named from *Byblis*, daughter of Miletus, ranks in the natural order *Droseracæ*. It is a pretty though minute plant, with blossoms of a beautiful blue, which are produced freely when planted in a good loamy soil; but it succeeds best when placed in a shallow cistern in the stove. Native of New Holland, introduced in 1800.

DESMANTHUS NATANS, a native of China, is a beautiful and interesting aquatic, producing its singular white flowers in abundance, if planted in a retentive soil, in a cistern where there is constant heat; while its foliage being dark green, and sensitive

to the touch, forms a happy contrast with the flowers. It belongs to the natural order Leguminosæ, introduced from China in 1800.

PAPYRUS ANTIQUORUM, derived from the Syrian *babeer*, whence the Egyptian word *papyrus*, paper. It belongs to the natural order Cyperaceæ. It succeeds well if planted in a loamy soil, in a cistern of good depth, and produces its apetalous flowers in great luxuriance. It is from this plant the Egyptians made their paper, which was obtained from the pellicle between the flesh and bark of the thickest part of the stem, pressed and dried. Introduced from Egypt in 1803. [This will probably suit for planting out in the garden during the summer.]

NYMPHÆA CÆRULEA, a very ornamental plant, decking the aquariums of our stoves with its bright azure blue flowers, which it produces in abundance, if planted in a loamy soil with a gentle heat, and kept constantly immersed in water. It succeeds also nearly as well in a pond in a warm situation; but if the season be cold during the time of the expansion of its flowers, they seldom or ever expand so well as in a warm close atmosphere. This beautiful plant derives its name from *Nymphe*, a water-nymph habitation, and belongs to the natural order Nymphæacæ. Native of Egypt, introduced in 1792.

VALLISNERIA SPIRALIS, named in honour of Antonio Vallisneri, an Italian botanist. This curious and remarkable water plant grows with great luxuriance, if potted in light turfy loam, and placed in deep water in a warm atmosphere; but succeeds nearly as well in a conservatory or greenhouse. It requires to be kept cool and dry during winter, and removed to the stove in February, which causes it to produce its richly tinted brown flowers in greater luxuriance than if kept in heat during the winter. It belongs to the natural order Hydrocharaceæ, and is indigenous to the South of Europe.

PONTEREDERIA CRASSIPES.—This is an elegant plant, from its singularly formed, thick petioles, bright green, smooth, cordate foliage, and spikes of lovely blue flowers. It seems almost to despise the material in which most other varieties of aquatic plants rejoice, and floats about, regardless of any fixed station in the element to which it is naturally consigned, but succeeds well if potted in rich loamy soil, and placed in shallow water in a stove. It is named in honour of Julius Pontederà, a professor of botany at Padua, and belongs to the natural order Pontederaceæ. Introduced from Guiana in 1825.

ELODEA GUIANENSIS, from *Elodea*, a marsh, which is its natural situation. It produces its white and conspicuous flowers about the beginning of August, in a light loamy soil, where heat is kept up. Introduced from Guiana in 1820. It belongs to the natural order Fluviales.

PARKERIA PTEROIDES, named in honour of C. S. Parker, who first discovered this fern-like plant in Essequibo. Its flowers are dark brown, in a short whorl; and although they are minute, yet its serrated pinnate leaves render it somewhat interesting. It succeeds well in loam and peat with the roots only immersed in water. It belongs to the natural order Polypodiaceæ.

HYDROLEA SPINOSA.—This minute plant represents the order Hydrolaceæ; and its flowers vie with the intense blue of the empyrean. The stem and foliage are decked with numerous spines, as a protection to the charming buds which raise their graceful form above them. It grows most luxuriously in a loamy soil, in shallow water, and placed in a stove where heat is maintained. Its name is derived from *hydor*, water, *elaia*, oil. Introduced from South America in 1791.

VICTORIA REGINA.—This is the most popular aquatic, and most majestic in appearance: it flowers in January in its native country, Guiana. It was discovered by Sir R. H. Schomburgk, in 1837; he describes it as "a vegetable wonder." Its immense leaves are from six to seven feet in diameter, salver-shaped, with a broad rim of a light green above, and vivid crimson below. Its flowers, resting upon the water, are in character with the leaves, consisting of many hundred petals passing in alternate tints from pure white to rose and pink, about fifteen inches across. The leaf on its surface is bright green, in form orbiculate; the stem of the flower is an inch thick near the calyx, and is studded with sharp elastic prickles, about three quarters of an inch in length; the calyx is four-leaved, each leaf upwards of seven inches in length, and three in breadth; they are thick and white inside, reddish brown and prickly outside; the diameter of the calyx is twelve or thirteen inches. The magnificent flower, when fully developed, resting upon the calyx, completely covers it with its hundred petals; when it first opens, it is white with pink in the centre, which spreads over the whole flower as it advances in age; it is generally pink on the second day after its expansion: as an enhancement of its remarkable beauty it is also sweet-scented.

HARDY AND BRITISH SPECIES.

The aquatic plants which are cultivated in British aquariums possess considerable and peculiar attractions. The purple of *Butomus umbellatus* gives an imposing effect to British ponds, while the elegant form of *Hottonia palustris*, "the naiad of the stream," enlivens many a month with its rosy flowers peeping from among the sedge, and the dead leaves of grasses by which it is environed. *Menyanthes trifoliata* again decks the margin of our English ditches with its interesting and lovely flowers, while the *Richardia Æthiopica*, or *Calla Æthiopica*, from the remarkable purity of its wax-like flowers, fixed on their long elastic stems, wave in graceful motion by the summer's evening zephyr reflected in the mirrored surface of the water.

The situation best adapted for hardy aquatics is found to be in accordance with the height attained by them; and according to this feature, so must the depth of water be regulated in which they are to be immersed: thus the *Richardia Æthiopica*, *Nymphaea alba*, and *Nuphar lutea*, require a depth of from one to two feet, while the *Caltha palustris*, *Hydrocharis morsus ranae*, *Sagittaria sagittifolia*, *Acorus calamus*, *Butomus umbellatus*, *Zannichellia palustris*, etc., should be planted from six to twelve inches from the surface of the water; *Hottonia palustris*, *Menyanthes trifoliata*, and *Aponogeton distachyon*, should be potted, and the pot fixed so as to be half immersed in the water. After the

blooming season of the *Aponogeton* is over, and the leaves look yellow, they may be taken up and dried, and again excited in the following March. *Stratiotes aloides*, which is one of the most curious indigenous aquatics, should also be kept with half the pot under water.

As some arrangement is requisite for plants of this description, it is desirable that ledges should be made in ponds or tanks where these plants are to be grown for them to be placed upon, according to their height, and also for the blending of their colours: the low-growing varieties, being generally the more tender, should for this reason, as well as to preserve a more systematic appearance, be placed at the margin, while those of larger growth and greater altitude should be planted towards the centre. The situation for *Nymphaea alba* and *Nuphar lutea* should be either in ponds or fast currents; the two, planted together at the edge of a waterfall, will blend their noble flowers in rich luxuriance amidst the surging foam of the surrounding water. Most of the other species prefer a shady situation, and are to be found in Nature's untrodden wilds,

"Far from the busy haunts of man;"

shedding their florets of varied hues in gay profusion, as if emanating from the lucid bosom of the water from which they partially derive their sustenance, and diffusing a pleasing lustre over the margin of the willow-shaded pond.

T. DAVIS.

BEDDING COMBINATIONS.

The following selections are from the Spring supplement to Carter's "Vade Mecum," 1862. Most of the combinations suggested have been used with success at Kew, Crystal Palace, and other large gardens:—

Centre *Gnaphalium lanata*, two rings of Punch Geranium, and two rings of variegated Alyssum.

Centre Mrs. Vernon Geranium, two rings of Flower of the Day, and a ring of *Lobelia speciosa*.

Centre Geranium Cerise Unique, a ring of Imperial Crimson Nosegay Geranium, and ring of *Cerastium tomentosum*.

Centre Punch Geranium, two rings of Cloth of Gold, and a ring of new *Lobelia speciosa* Kermesina.

Centre Mangle's Variegated Geranium, and two rings of *Lobelia speciosa*.

Centre Cottage Maid Geranium (deep zoned leaf, brilliant scarlet flower), a ring of Coral Nosegay Geranium, edged with Scarlet Ivy-leaved Geranium.

Centre Crystal Palace Scarlet Geranium, edged with *Cerastium tomentosum*.

Centre Cloth of Gold Geranium, ring of Crystal Palace Scarlet, edged with Variegated Alyssum.

Centre *Perilla Nankinensis*, two rings of Rubens Geranium, edging of *Mentha variegata*.

Centre Flower of the Day Geranium, ring of *Lobelia speciosa*, edged with *Cerastium Biebersteinii*.

Centre Crystal Palace Geranium, ring

of Flower of the Day, edged with *Lobelia speciosa*.

Centre *Cineraria Maritima*, two rings of Little David Geranium, edging of *Gnaphalium lanata*—pegged down.

Centre Purple King Verbena, two rings of *Tropæolum* (true Crystal Palace variety) *Lobbianum elegans*.

Centre *Tropæolum Lobbianum elegans*, edged with Verbena Zampa.

Centre Trentham Scarlet Geranium, edged with White Verbena Snowflake.

Centre White Petunia, a ring of Verbena Geant des Batailles.

Centre Petunia magna coccinea, edged with *Cineraria Maritima*, kept dwarf.

Centre *Calceolaria aurea floribunda*, two rings of Imperial Crimson Nosegay Geranium, edged with Dandy Geranium.

Centre Verbena Firefly, two rings of Purple King, and a ring of Geranium Shrubland Pet.

Centre of Geranium Brilliant, a ring of Geranium *Gossularioides*, edged with *Cerastium Biebersteinii*.

Centre Ivy-leaved Geranium, edged with *Cuphea platycentra*.

Centre *Ageratum Mexicana variegata*, ring of Punch Geranium, edged with *Stachys lanata*.

Centre Verbena Mrs. Woodroffe, ring of Geranium Flower of the Day, outer ring of *Lobelia speciosa*, intermixed with *Cerastium Biebersteinii*.

Centre *Perilla Nankinensis*, ring of Cloth of Gold Geranium, edged with *Lobelia Kermesina*.

Centre Dahlia Zelinda, with two rows of Cloth of Gold Geranium.

Centre Yellow Hollyhocks, two rings of Crystal Palace Scarlet Dahlia, edged with *Heliotropes*.

Centre Dahlia alba nana floribunda, two rings of Crystal Palace scarlet Geranium, edged with *Gnaphalium lanata*.

Centre Dahlia, The Pet (beautifully spotted), ring of Dahlia Orb of Day, edged with Nosegay Geraniums.

Centre Purple Hollyhock, ring of Dahlia Queen of Whites, ring of Geranium Trentham Rose, edged with *Cineraria Maritima*.

Centre Geranium Lady Mary Fox, edged with Verbena Beauté Supreme.

Centre *Salvia fulgens variegata*, ring of *Ageratum Mexicana*, edged with *Cuphea platycentra*.

Centre *Salvia patens*, ring of *Ageratum variegata*, edging of *Heliotrope La Petite Negress*.

Centre *Delphinium formosum*, with ring of Yellow *Calceolaria*. [This we think horrible.]

Centre Geranium Crystal Palace Scarlet, with ring of *Cerastium Biebersteinii*.

Centre Verbena Purple King, edged with Geranium Golden Chain.

Centre Purple Nosegay Geranium, edged with *Agatheæ celestis variegata*.

Centre *Stachys lanata*, broad ring of *Lobelia speciosa*, edged with *Cerastium tomentosum*.

Centre Cannas, ring of *Tritoma uvaria*, ring of *Centaurea candidissima*, edged with *Lobelia speciosa Kermesina*. [Fit for large beds only.]

Centre Pampas Grass, ring of Cannas, ring of *Tritomas*, edged with *Gnaphalium lanata*.

Centre *Cerastium Biebersteinii*, and two rings of *Lobelia speciosa Kermesina*.

Mixed Beds of Geranium Flower of the Day and Scarlet Verbena.

Mixed Beds of *Heliotrope* and Scarlet Verbena.

Mixed Beds of *Gnaphalium lanatum* and Scarlet Geranium.

For Pincushion Beds—Geranium *Gossularioides* and *Cerastium Biebersteinii*.

For Pincushion Beds—Dandy Geranium and *Lobelia speciosa*.

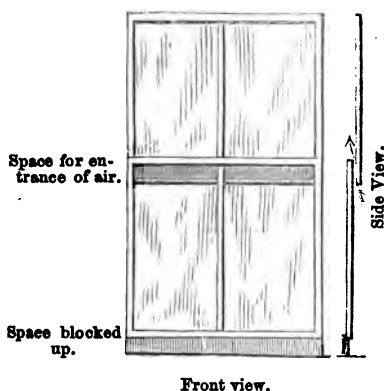
COSTLESS VENTILATION.

A CONSTANT supply of fresh air is so important to our well-being, and in the prevention and cure of disease, that the subject needs no comment: an attendance, however, at any public meeting is only necessary to convince one how much this axiom is ignored—or if admitted, how unsuccessfully met.

For some time I adopted the plan of opening the window-sash at my patients' houses at the top, and stretching out on a

frame a corresponding depth of tarlatan, to intercept blacks and prevent draught; but, although a modification of, but not an improvement on, this method, has the support of a popular lecturer at an institution for the diffusion of art and science, the principle is wrong and the result unsatisfactory, as the draught is directed downwards on the sitter, and not upwards towards the ceiling: the screen, too, is anything but ornamental, and becomes clogged with

blacks, so as to require removal and repair.



The method I now use is simple, economical, quite free from draught, and does not get out of order. Raise the lower sash in the window, and place in front of the opening at the bottom rail a piece of wood

of any approved depth: this leaves a corresponding space between the meeting rails on the middle of the window, through which the current of air is directed upwards towards the ceiling: heavy blacks cannot ascend with the air, which is driven so high as to be warmed before it descends. The principle may be modified in various ways, making the bottom frame of wire blinds supersede the strip of wood: in a word, open the lower sash of the window two or three inches, and block it up anyhow, and the air enters the space in the middle and is carried to the ceiling.

It will be seen that this simple plan is adapted for the cottages of the poor and the mansions of the rich: in the latter, however, the draperies *must be arranged so as not to interfere with the current of air towards the ceiling*. It may be used in any weather, day and night, summer and winter; indeed, in the house of a medical friend, to insure constant action, the window of his reception room has been nailed open.

PETER HINCKES BIRD, F.R.C.S., F.L.S.
1, Norfolk Square, Sussex Gardens, W.

NOTES ON USEFUL PLANTS.

FUCHSIA METEOR.—This is a strong-growing variety apparently of the strain of Corallina, and of that habit in leafage and vigour, but with semi-double flowers and richly variegated leaves and stems. Instead of the white and yellow, common to variegated plants, the colouring is in this case quite novel and remarkably rich. The young shoots are a vivid crimson, as the leaves increase in size they acquire a rich mottling of warm orange, crimson, and bronze, so that the plant is at all times a most attractive and interesting object. Grown strong and planted out, we should imagine this to make one of the most beautiful objects imaginable in a bed. A first-class certificate has been awarded to this by the Floral Committee of the Horticultural Society on account of its beautiful foliage. [Carter and Co., plants 7s. 6d. to £1 1s. each.]

LOBELIA SPECIOSA KERMESINA.—A variety of *Lobelia speciosa*, having the same dwarf growth and free-flowering habit as that variety, but the flowers rich rosy purple. This will be of great value for a new style of colouring front lines. [Carter and Co., 1s. 6d. each.]

SCROPHULARIA NODOSA VARIEGATA.—One of the most useful variegated plants for edgings, and a capital match for gera-

niums, the leaves being about the same size and broadly edged with white. It is thoroughly hardy, and therefore of the greatest value for bedding in places where there is not much convenience for keeping variegated geraniums. It was used last year in the Palace Gardens, Armagh, in a ribbon between scarlet geranium and blue lobelia, and was considered to produce a fine effect. [B. S. Williams, 1s. 6d. each.]

AGATHEA CELESTIS VARIEGATA.—We called attention to this beautiful variegated plant when first brought out by Mr. Bull. It is now generally distributed through the trade, and obtainable at a cheap rate. The leaves are wholly stained with creamy and amber tints, and the blue flowers are freely produced. It is an important acquisition.

COLEUS VERSCHAFFELTI.—Connoisseurs in foliage plants should try this superb plant out of doors this season. We believe it will answer admirably for ribbon lines, and if so, will far surpass in beauty all the perillas, orachs, and amaranths, the foliage being richly coloured with scarlet crimson and orange, blended together. For greenhouse culture it is unequalled, and requires no more care than a balsam, which it somewhat resembles in constitution,

HANBOLINUM ATRO-RUBENS.—A magnificent composite from Mexico, well adapted to grow for exhibition in collections of greenhouse plants. The cordate leaves are of a deep bronzy green, the mid ribs and leaf-stalks rich crimson, the flowers in large corymbs of delicate lilac purple, the beauty of which is intensified by the vivid crimson of the flower-stalks. We are not aware if it has yet found its way into any English collections, but as it was introduced to Ghent by M. Verschaffelt, it will find its way here in time, and we advise plant-growers to be on the look out for its appearance in nursery catalogues.

LAPAGERIA ROSEA.—This finest of greenhouse climbers has been the subject of much discussion as to the method of culture best adapted to its peculiar constitution. It has also been the cause of more disappointments, perhaps, than any plant introduced during the last quarter of a century, for when seen in a fine condition, as it may be seen now at the nursery of Messrs. A. Henderson, Edgeware Road, it has such a grand appearance, and is obviously so easy to manage, that nearly all who see it determine to grow it, and nearly all who determine to grow it, fail either to get it to bloom or to keep it alive. Yet it is an easy thing to grow it, once set it going properly, and go it will, up any length of rafters, across the house on rods and chains, or over a trellis of almost any dimensions, and bloom as fully as any climber known. To grow it in a pot is simply to trifle with it, and it will not make useful roots in any soil but a turfy peat. The plant at Messrs. Henderson's is in a bed about fifteen feet long by four feet wide: In a moderate-sized house, a bed across the end of the house, and about two and a-half or three feet wide, will answer very well. Dry, good, tough peat will suit, even if black bog in which delicate heaths would not thrive, but it must be peat with a moderate amount of fibre in it. The bed should be raised with a front of bricks or stones, two feet high, and a pipe from a cistern should be

brought in, so that at any time the whole bed may be flooded with water. It is the peat, the water, and the abundant root-room that give vigour to *Lapageria*, and cause it to rush up the trellis almost as fast as a convolvulus. As to temperature, it requires protection from frost, and that is all that need be said about it, for *Lapageria rosea* is quite hardy, and must be kept as airy as a Cape heath.

But proper planting and watering are not the only requisites to success. Plants from cuttings rarely do any good. Mr. Summers, manager of Messrs. Carter's Forest Hill Nursery, remarked to us the other day that when at Mr. Mongredien's, he frequently bought *Lapageria*, and always lost it if the plant was a rooted cutting. Messrs. Henderson raise their stock by layering on the bed, and these rooted layers generally do well. But the safest method is to raise it from seed, and this the trade begin to understand, and accordingly seedling plants are now grown at some nurseries, and with such there is no risk at all. As soon as they have filled 48-pots with roots, they should be turned out, and from that moment the plant should be treated as hardy, for artificial heat, except to keep it safe from frost, is most injurious.

THE BEST TWELVE BEDDING DAHLIAS.—Captain Ingram, crimson maroon, shows an eye, a tremendous bloomer, two feet; *Alba nana floribunda*, white, compact habit, two and a-half feet; *Lilacina variegata*, lilac flowers, variegated foliage, two and a-half feet; *Prince Arthur*, crimson, two feet; *Sir James Watts*, deep scarlet, good enough for exhibition, two and a-half feet; *White Unique*, white, small flowers in clusters, two feet; *Golden Ball*, deep yellow, the best bedder we have, two feet; *Crystal Palace Scarlet*, scarlet, blooms late, two and a-half feet; *Queen of Whites*, white, two and a-half feet; *Titian*, pure yellow, flowers loose, very showy, two and a-half feet; *Zelinda*, purple, good habit, two feet; *Beauty de Massife*, bright scarlet, two and a-half feet.

NOTES BY THE WAY.

FOLIAGE BEDDERS

My ribbon of foliage plants made such a fine feature last year, that though I grew a set of fuchsias for this season, I could not resist the temptation to run in the old

track, and I have now planted four rows as before, with a centre bed in the same style, reserving the showy subjects for the lower part of the garden, where my favourites would have less effect. It is a matter of no small importance for ama-

teurs who are not weighed down with surplus cash to have at their command materials for rich and decisive ribbons at the cost of a few shillings for a hundred yards or so; and it is a matter of importance for the students of art in garden colouring that plants which are not of the gayest in ordinary beds show to fine purpose in long continuous lines, if well assorted as to colours and heights. My back row is of the striped grass (*Phalaris*), the next row, *Chenopodium atriplicis*, which is exquisitely coloured, if kept making new shoots by frequent nipping; the next row is *Antennaria margaritacea*, which lives out all winter, and requires parting and replanting true to the line in the spring, and which must also be nipped down to make it bushy and extra silvery, as the new growth is the whitest; in front is a line of perillas and purple orach mixed; these are also to be kept nipped. The orach will not last the season out, so about the 20th of June I sow again, and as the old plants persist in running to seed, a fresh lot will take their place. The bed in the centre of the forecourt consists of *Amaranthus speciosa*, with richly coloured foliage, in which the prevailing hue is a bronzy crimson. This was specially recommended to me by Mr. Howlett, and I had seed enough from Messrs. Carter to plant the whole parish. All my stock was got up this season without artificial heat; the sun did it all by shutting up the seed pans with squares of glass over them, as I was determined that a poor man's plants should be grown poor man's fashion, to settle the point in my own mind that a thoroughly good garden show may be done without involving the cultivator in insolvency. I put out *Coleus Verschaffelti* on the 12th of May, and though since then it has had to endure rough weather, it has been growing steadily without a shrivelled leaf, and has a better colour than under glass. Rich soil and sunshine will make this a first-rate bedder, and instead of the sepulchral hue of perilla or the seeding habit of the purple orach, we have in this exquisitely beautiful plant a rich glowing bronzy crimson, a sturdy habit, and a free grower in any good soil. Another good point in its history is that it may be dealt with bedder fashion, and kept on from summer cuttings, or if the old plants are taken up, and kept over winter, cuttings made in spring, and pushed on in a warm, moist atmosphere—a smart dung heat best of all—will make fine plants by the end of May. I took off a few of the smallest side-shoots, scarcely an inch long, potted them singly in thumbs, in half silver sand and half peat, put them under bell-

glasses in a cucumber frame, and they rooted in eight days. There is nothing among the foliage novelties of greater value than this *Coleus* for garden decoration. I tried hard to get seed of *Amaranthus melancholicus rubra*, but without success.

I have now received from Mr. Veitch a plant, which I shall turn out and encourage with a view to seed it, and thenceforth to use it as an element in composite planting. The foliage is blood red, habit compact, the leaves large and shining, height not more than one foot, and when the sun shines through the foliage, nothing can surpass it for richness, and it is, moreover, peculiar and cheerful. *Oxalis corniculata*, which I mentioned last year as likely to be useful for masses, is altogether useless for that purpose; it is too dull and heavy, though a pretty thing for pot culture to make a contrast among foliage plants.

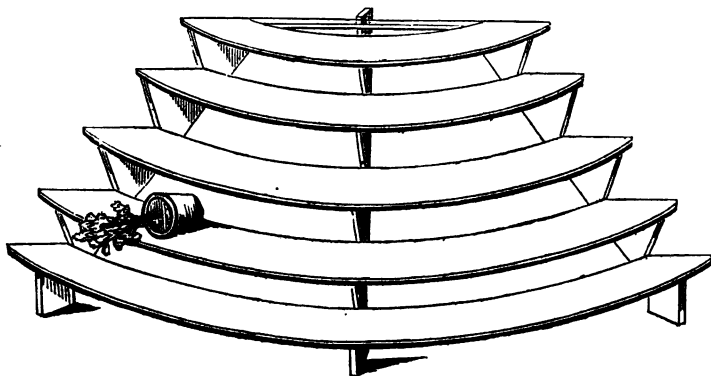
STUFF.

I ought long ago to have told how I supplied myself with twelve months' supply of the best general compost I ever had for plant-growing; it has been as good as gold dust, and gold would not have bought a mixture so well suited for every kind of greenhouse plants. When building a lean-to on the site of an old privet hedge and ditch in the lower part of the garden, a deep trench was cut in order to provide earth for the bank and border of the front of the house. That trench was filled in with clay to within two feet of the level. The muck-pits were cleared out in February into the trench, all the leaves and other such rubbish were thrown on the rotted muck, and forked over with it. The old hedge was chopped up and charred with all the prunings of trees and other dry rubbish. A layer of the charrings was thrown on the muck mixture, and on the charcoal and ashes potatoes were laid in rows twenty inches apart, and moulded over with pulverized clay that had been frozen all winter. This was done in the spring of 1861. We had from that made-up ground a fine crop of fifty-fold potatoes, and as the potatoes were taken off, the garden boy dug out the mixture to the bottom of clay, and run it through a half-inch riddle, and stored it under cover. Such a mixture I should like to have at command *ad libitum* all the year round. It consists of powdery clay in a small chippy state, small charrings, wood ashes, and the sweetest leaf-mould; it is full of grit, and, therefore, except for special purposes, there is no occasion to mix sand with it. A little old dung added makes it the perfect-

tion of a compost for fuchsias, balsams, cockscombs, and whatever likes a rich light soil; without dung it is just the thing for pelargoniums, and even ericas and rhododendrons will grow in it. I have some plants of *Calluna vulgaris*, not an easy thing to grow, though it covers many a square mile of waste and common, and the mixture suits them as well as Wimbledon peat. Most of the hardy ferns like it, and if farther supplies were easily obtainable, I should use it instead of turf for the cucumber beds. In many an old garden where the fences have outgrown their boundaries, and a hundred loads of loppings and prunings might be got together in winter, this kind of mixture could be prepared every year, and pay for the trouble in potatoes the next season. Clay, loam, turf, any sound staple mixed with it, gives it body, and the potatoes root into

the Floral Hall, Covent Garden, as described in the *FLORAL WORLD* at the time the rose show took place there. The construction and use is shown in the annexed diagram.

Any plant that makes a dense head of bloom will do for this sort of display; a centre of white cinerarias, and two sides of crimson or blue cinerarias, made a grand spectacle this season on the occasion of a birth-day fete. A centre of *calceolaria Aurea floribunda*, and the sides of Lord Raglan or Prince of Prussia verbenas would do now as well as anything. Plenty of plants of two or three sorts to make even surfaces of colour from top to bottom, are the proper materials for furnishing. Any who adopt this scheme will adopt also their own modes of furnishing, and it only remains to give a hint as to maintaining the show for any length of time, as it is ob-



Exhibition Flower Stand.

the leaf and half-rotted green stuff, and hasten its complete decomposition.

FLOWER SHOWS AT HOME.

A friend of mine has lately had a large hall fitted so that it can be made at an hour's notice either a picture gallery or a flower show. He has had copies made of certain celebrated pictures on canvas to roll up like drop-scenes at a theatre, the rollers and cords are hidden with a cornice, and when the pictures are shown, they fall down into gilt mouldings, so as to appear like great oil paintings in handsome frames. To make the change the pictures are rolled up and disappear under the cornices, and flower stands, made to take to pieces and fit together with bolts and screws, take their places. They are made on the plan of the great semicircular stand used at

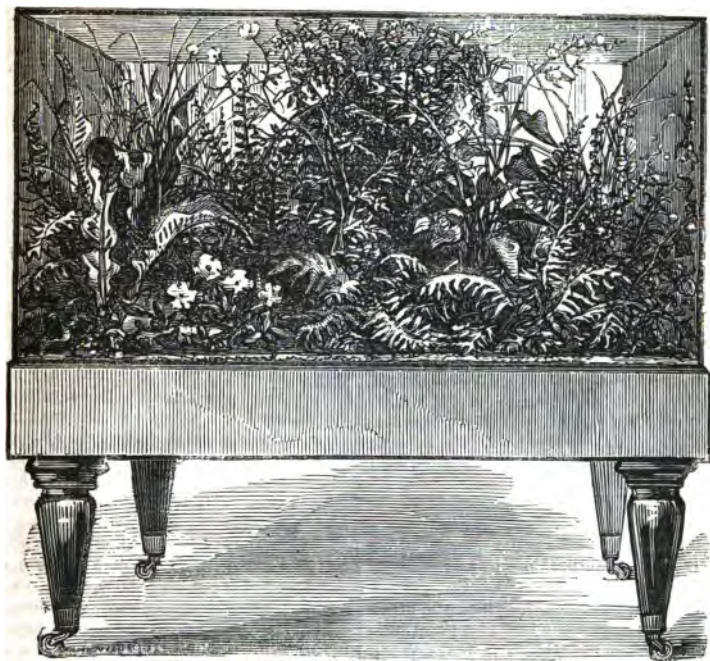
vions the same plants will not endure to be laid on their sides long without either getting dried at the root or turning their heads up so as no longer to present a full face to the spectator. It is imperatively necessary, therefore, to remove the whole of the plants every night to a clean pavement or flooring of tiles, and there soak them with water, and leave them till the morning. They may then be replaced on their sides and the same plants will hold out for a fortnight. My friend's hall has a garden entrance, by means of which the work is done without any disturbance of the household.

PICKARD'S PLANT CASE.

Mr. Chitty's mention of this in his interesting papers on "Flowery Windows," reminded me that it was time we figured it

in these pages. I saw it last year at the Horticultural Society's show, and made a note of it as a proper subject for remark in these pages some day, and in order to be fully acquainted with its merits, I added it to the number of our appliances for indoor plant culture. It occupies a window in the bed-room, and is stocked with ferns planted in cocoa-nut refuse; its appearance as an ornament is most beautiful, and the plants are doing so well that I should pronounce it the best form of Wardian case ever invented. The figure will show its proportions and character. It consists of a metal box for soil or plunging material; sides, ends, and top of single

elegant drawing-room in England. It is the invention of Miss Maling, the author of some pretty books on window flowers, two of which I have, namely, "Window Plants, and how to Grow Them," and "Flowers for Ornament and Decoration." These books are written in a simple style, they abound in good instruction and ingenious suggestions, and they properly prepare the way for these plant-cases, by interesting readers in what may be done with them. Any of our lady friends who wish for further information as to the plant-cases, can obtain it of the manufacturers, Messrs. Pickard and Co., Caledonian Road, King's Cross, London, N. I shall



Pickard's Patent Plant Case.

sheets of glass in light frames, any one of which may be removed without disturbing the rest, the top plate moving on rests for ventilation, and the front taking out in an instant by the simple process of lifting, and being fixed in its place again by a couple of small hooks and eyes. At the show on the 21st, one of these was exhibited, furnished with caladiums, begonias, and other plants of striking forms and curiously coloured foliage, and its appearance was such as would render it fit for the most

hope to find space shortly for some observations on fern culture in continuation of the lists which have appeared in the *FLORAL WORLD*, and shall then have something more to say on these and other contrivances. Miss Maling's books are published by Smith and Elder, at half-a-crown each.

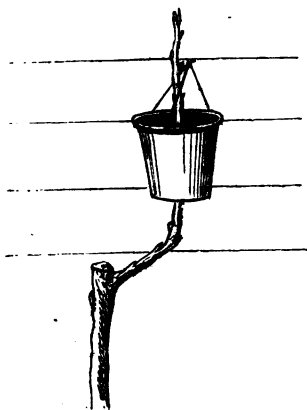
PROPAGATING ROSES.

There is a very simple and certain mode of propagating roses, admirably

suited to amateurs who are not expert at striking cuttings. It is that of "circum-position," by means of which a growing branch is made to root in a pot without removing it. It is applicable especially to roses and vines, and many other subjects that make long shoots, such as can be drawn through a pot. I have now some nice pot vines, which were rooted last year by taking rods up through pots placed one above another on open shelves, and when the pots were full of roots, each was cut away by passing a sharp knife through the rod under the bottom of each pot. I have frequently got plants of teas and other delicate Chinas by this process, which was largely practised by my father, who taught me how to do it when I was twelve years of age. There is now in the garden a seedling Bourbon of some character, which I worked on a briar five years ago, and it had a grand head when the winter of 1860 caught it, and killed it back to one bud. That bud started last summer, and made one weak rod, and having no other plant of the variety, I must secure it on its own roots, or it may be lost. To make very sure, as this is a peculiar case, the tree was planted beside the wire trellis on which my espalier apples are trained. To the trellis I fixed a forty-eight-pot by means of copper wire, then drew the single shoot through, having first removed the side shoots that were in the way, and filled the pot with a light sandy mixture. In the course of another week from this I expect the pot will be full of roots. I shall then cut the shoots away close under the pot, and there will be one plant on its own roots and the remainder of the shoot will form a new head to the tree, so that the original standard will probably make as fine a plant as before the great winter punished it almost to the death. Now this is a mode of propagating which may be applied in various ways. First select the shoot to be rooted, then make a notch just to the wood on one side at a point convenient for its rooting in a pot. When the notch has healed, place the pot so that the branch comes through it, put either a tuft of moss over the hole, or a handful of crocks, and fill up with light sandy soil, say bits of old turf of the size of walnuts, chopped moss, and silver sand; keep it watered, and roots are sure to come in time. No leaves or pushing buds should be covered; better to rub them off.

If a trouble to draw the shoot through the hole in the pot, owing to the size of the leaves, break the pot in half, and then bring the parts together, and bind them with copper wire. A stake or the stem of

the tree to be rooted will support the pot, or if the plant to be propagated is in a pot, put it under a shelf on which the circum-posed pot will stand. Another way is to



peg the shoots down on pots all round the parent plant, by which process I am now rooting a stock of Noisette Ophirie for a bed next year.

PLANTS RECOMMENDED.

Helleborus dumetorum.—In a shady nook of a rockery this forms a noble mass of foliage, and throws up very elegant spikes of green flowers. I should never have thought to mention it as of special value, had I not potted a few to grow under glass, where to group with ferns and other fine foliage plants it is most beautiful. Whoever will grow this in a cool house, will prize it as a treasure, and it may be had in any nursery for a shilling.

Azalea amana.—I am now completely satisfied about the hardiness of this rosy flowering gem. The plants of it in my upper peat bed have been one mass of bloom since the end of April, and are now fading off. I shall replant all my peat beds next year, as they are getting overcrowded, and in the new arrangement, *Azalea amana* will form the outside circle next the *Spergula* in the bed next the house.

Onoclea sensibilis.—This lovely fern is quite hardy, but does better in pots than in the open ground. I put out three on my fern bank last year, and they have spread by their rhizomes so as to form now fifteen strong stools, all of which have been taken up and potted. Be sure to get this fern if you have not got it, and remember that it takes its specific name, *sensibilis*, from its extreme

sensibility to drought. It needs a sprinkle twice a day, and to be always in the shade.

Fuchsia.—Carter's Meteor planted out on a bank among foliage plants looks superb. It is a hundred times better in the open ground than in a pot, and grows as freely and in the same manner as *Corallina*. A fine specimen well cared for is like a fountain of fire. Madame Cornelliison is the best double white, the foliage rich purple, and very distinct. Whether it will be good out of doors I do not yet know, but for pot culture it is exquisite.

Alocasia metallica.—The plants of this at the Crystal Palace Show were distorted by the pegs placed to keep their leaves upright, with their faces to the spectators, and its proper outlines were not seen.

The leaves spread regularly all round, and a good specimen covers a square yard of surface. The metallic purpléd bronze colourings are rich in the extreme, and it is one of the first plants to be selected by those who are making additions to their stock of stove plants. Grow it in lumpy peat, old dung, or fibry loam, keep it shaded,

with plenty of water and stove culture all the year round.

Athyrium filix femina, var. *Corymbiferum*.—This tasselled lady fern is the most elegant of about sixty kinds now growing on a shady bank. I had a plant from Mr. Sim when it was first sent out at fifteen shillings each, and by dividing increased the stock to a dozen. One of these was put out last year, and it now spreads its beautifully tasselled fronds over a space of ground twenty inches each way, is less erect than the parent species, and quite as hardy. As it is now cheap, everybody should have it.

Adiantum sulphureum.—This is a new hardy greenhouse fern of true *Adiantum* habit; it grows a foot high, and while possessed of the grace peculiar to the tribe, it has a powdering of gold on the under sides of the fronds. It will do for people who cannot grow *Gymnogrammas*, though these last are by no means difficult; my better half has a pretty collection of seedling *Gymnogrammas* in a Wardian case, doing admirably, though without any aid from artificial heat.

SHIRLEY HIBBERD.

A SELECTION OF STOVE FERNS.

In the March number we published a list of varied ferns suitable for a small greenhouse; we now give a similar selection for the stove, merely observing that we have chosen only those species which will furnish the greatest diversity of form in the smallest space. The list might easily be extended to double or treble the length, but too long a list is only confusing, and would render it necessary for many of our readers to make a selection from it. The better plan, therefore, is to give a short list, every plant in which is worth growing, but if any of our readers should wish for the names of a few more, we shall be happy to furnish them.

1. *Adiantum trapesiforme*, Tropical America.
2. *A. caudatum*, East Indies.
3. *A. tenerum*, Tropical America.
4. *A. concinnum*, Mexico and Peru.
5. *A. macrophyllum*, Tropical America.

All the maiden-hair ferns are worth cultivation; there is not a single species which is an exception. The slender, black, polished stems, and the bright green segments of the fronds are the type of all that is graceful and beautiful. No. 2 has trail-

ing fronds which root and make young plants at the points. There is something about No. 4 which renders it an especial favourite with me; there is always a larger pinnule at the base of each division of the frond, which overlaps the forking of the rachis.

6. *Aspidium decurrens*, Ceylon.

7. *A. ebenum*, Mauritius.

These are more subject to the attacks of the brown scale than almost any fern; I felt at first inclined to exclude them from my list, but they are very distinct and useful plants, and will repay the trouble they require.

8. *Asplenium formosum*, West Indies.

9. *A. radicans*, Tropical America.

10. *A. viviparum*, Mauritius.

11. *A. Belangeri*, Java.

It would be easy to select a score of distinct and beautiful *Aspleniums*, but in order to keep our list within moderate bounds, we have mentioned four only. No. 8 is one of the most graceful plants in the family, the once divided fronds radiating from the centre, and dropping gracefully around. No. 9 has larger divided fronds. In No. 10 we have small fronds divided almost into capillary seg-

ments, which produce young plants upon their surface.

12. *Ceratopteris thalictroides*, tropical parts of the world, both in the eastern and western hemispheres. This is a very interesting plant, being truly aquatic, growing almost as well submerged, as above the level of the water. It produces a great number of young plants on the fronds. They should be kept rather drier during winter.

13. *Cincinnatia flavens*.

14. *C. nivea*.

Both small-growing ferns from Tropical America, the first yellow on the under side of the glaucous fronds, the other white below.

15. *Colysis membranacea*, East Indies.

Very thin undivided fronds, showing the arrangement of the veins like a piece of delicate lace.

16. *Cheilanthes radiata*, West Indies, and warm parts of America.

The divisions of the frond arranged like the spokes of a wheel from the top of the stipes, very unlike any other fern and very beautiful.

17. *Gymnogramme Calomelanos*.

18. *G. Mertensii*.

19. *G. chrysophylla*.

20. *G. sulphurea*.

21. *G. pulchella*.

These are all natives of the tropical parts of the New World. Nos. 18 and 19 are bright golden ferns; No. 20, as the name implies, sulphur-coloured, and a small grower; Nos. 17 and 21 are silver-ferns. They like a little more leaf-mould in the soil than is usually given to ferns.

22. *Hemionitis palmata*, West Indies.

23. *H. cordata*, East Indies.

These are somewhat subject to the attacks of a small insect called thrips; these may be kept down by fumigating with tobacco, or if they are not too numerous, lay the plant upon its side and syringe well. This is also the case with the two following; by keeping a sharp look-out, however, they may easily be kept clean.

24. *Doryopteris pedata*.

25. *D. sagittifolia*.

Both from Brazil.

26. *Fadyenia prolifera*, West Indies.

A very interesting little fern which grows much larger than we generally see it, if cultivated in a warm frame.

27. *Gleichenia flabellata*.

28. *G. dicarpa*.

Both natives of the warmer parts of Australia. No selection of Ferns could be thought perfect without a specimen or two of *Gleichenia*.

29. *Humata pedata*, East Indies^a

30. *H. heterophylla*, Malayan Archipelago.

Two very pretty *Davallia*-like ferns. No. 30 has entire sterile fronds and a creeping stem, and soon attaches itself to a moist wall; it also looks well growing in a basket.

31. *Llavea cordifolia*, Mexico.

This is also known in gardens as *Ceratodactylis osmundoides*. Its gracefully drooping fronds are glaucous, and the stems covered with silvery scales.

32. *Lepicystis sepulta*, Tropical America.

The fronds sprinkled with little scales, well worth examination under the microscope.

33. *Lomaria discolor*, New Zealand.

34. *L. L'Herminieri*, Tropical America.

No. 33 may perhaps succeed in a warm greenhouse, but many New Zealand ferns enjoy a warmer atmosphere. No. 34 is a miniature tree-fern, making a stem three or four inches high, terminating in a tuft of fronds, which while young are a bright rose colour.

35. *Blechnum gracile*.

36. *B. lanceola*.

Both are American. These resemble the *Lomarias* in habit and appearance.

37. *Leucostegia immersa*, East Indies.

This is a herbaceous species, *i. e.*, the fronds die off in winter, the pot may then be turned on its side, and kept rather dry.

38. *Lygodium scandens*, East Indies.

All the *Lygodiums* are climbing ferns, and every selection should contain at least one example.

39. *Meniscium simplex*, China.

A very pretty little entire-fronded plant.

40. *Pellaea ternifolia*, Tropical America.

This plant should always be grown in a basket, and suspended from the roof.

41. *Platycerium stemaria*, West Africa.

42. *P. grande*, Australia and East Indies.

These should both of them be grown against a flat board or bit of a stem, as by that means the fronds are shown to greater advantage. No. 41 makes young plants freely, and may therefore be increased by division; this is not the case with No. 42.

43. *Polypodium Schkuhrii*, Brazil.

The feather-like character of this fern, is unlike that of any other.

44. *Pteris argyræa*, Assam.

45. *P. tricolor*, America.

These two variegated ferns are universal favourites. No. 44 is more easily cultivated than the other, but looks more beautiful while young than it does full

grown. Be careful not to let the fronds of No. 45 get wet.

46. *Stenozemia aurita*, Java.

A very pretty viviparous fern, with broad sterile and contracted fertile fronds.

47. *Onychium auritum*, Malayan Archipelago.

The golden colour on the young fronds is a very pretty character in this plant.

48. *Trichomanes reniforme*, New Zealand.

49. *T. spicata*, West Indies.

Many species of this genus have been recently introduced, they all need growing

under a bell-glass. Of the special mode of treatment we shall speak on some future occasion, rather than at the end of an article like this.

50. *Vittaria lineata*, Tropical America, and West Indies.

We finish the half hundred with a curious plant which grows upon the branches of trees, looking more like tufts of grass than the fronds of any ordinary fern. It should be grown in a basket. A circle of it around the edge with an upright-growing fern in the middle, would have a very pretty effect.

AMATEUR TULIP SOCIETY.

EXHIBITION AT GREYHOUND INN, DULWICH.

ON Monday the 19th of May, the annual exhibition of tulips took place at the above tavern, and, as usual, attracted a large number of visitors, who enjoyed the fine display in a spirit of thorough appreciation. The prizes awarded by this society are so arranged that growers residing within five miles of the metropolis are not required to compete with growers residing further away from the influence of coal smoke; the country growers and town growers compete respectively among themselves.

A fine day, a pleasant journey, and a noble display of flowers generally suffice to make people happy; and we believe the day was one of unmixed enjoyment with all who were present.

The first prize to country exhibitors was awarded to C. Williams, Esq., of Tottenham, whose stand was well worthy of the distinction. It consisted of—*Byblæmens*, Walker's Duchess of Sutherland, Salvator Rosa, Crook's Carolus; *Bizarres*, Sunbeam, Admiral Dundas, Mr. F. Perkins; *Roses*, Lady Catherine Gordon, Triomphe Royale, Lady Clifton. The second prize was awarded to N. Norman, Esq., of Woolwich, for *Byb.* Salvator Rosa, General Barnovelde, Walker's Duchess of Sutherland; *Bis.* Saint Clare, Willison's King, Everard; *Rose*, Triomphe Royale, Headly's Helena, Cerise Primo.

Equal prizes were given to J. Sanders, Esq., and Mr. J. Brown. The first exhibited *Byb.* Sir Robert Peel, Mr. Butler, Bloemart; *Bis.* Don Cossack, Bizarre 1861 (fine), Mr. F. Perkins; *Rose*, Duchess of Sutherland, Evelyn, Fleur de Marie. Mr. Brown had *Byb.* Goldham's Emma, Triomphe Royale, C. Kemble; *Bis.* Lord

Lifford, Romei, Polyphemus; *Rose*, Surprising, Cataline, Marie.

Among the town exhibitors, B. Williams, Esq., of Stamford Hill, was first with *Byb.* Sable Queen, Euridice, Claudi; *Bis.* Dr. Horner, Strong's King, Optimus; *Rose*, Triomphe Royale, Aglaia, King of Saxony. Equal prizes to C. L. Crooke, and J. Scarnell, Esq. The first of these exhibited *Byb.* Penelope, Miss Fanny, Grace Darling; *Bis.* Delaforce's King, Lord Lifford, Strong's King; *Rose*, Alicia, Aglaia, Triomphe Royale. J. Scarnell, Esq., had *Byb.* Mrs. Siddons, Duchess of Sutherland, General Barnovelde; *Bis.* Sir Robert Sale, Marshal Soult, Albion; *Rose*, Bion, Triomphe Royale, Picturata. J. Wear, Esq., was second with *Byb.* Francis, Dunn's Duke of Cambridge, Delaforce's Commodore; *Bis.* Dr. Horner (wherever this appeared it was an exquisite flower), May's Prince Albert, Vivid; *Rose*, Madame Vestris, Groom's Sewald, Triomphe Royale. We were particularly struck with the beauty of a flower for which no prize was awarded. It was called "Holmes's Queen," a fine rose, of elegant form and the purest markings. As we did not learn by whom this flower was put up, we could gain no tidings respecting it; of such a gem the utmost we can do now is to "make a note of it," and ask if any of our readers can furnish information of its history and whereabouts. Pactolus, one of a few odd flowers put up by C. Williams, Esq., of Tottenham, attracted our attraction as a most remarkable bizarre. The form is perfect, the yellow most clear and beautiful, and the lacing of rich chocolate round the margin of each petal as regular and distinct as the lacing of a heavy-edged picotee

JUNE, 1862.

PHASES OF THE MOON.—First Quarter, 5th, 2h. 43m. after.; Full, 12th, 6h. 16m. morn.; Last Quarter, 19th, 2h. 12m. morn.; New, 27th, 6h. 54m. morn.

30 Days.				Weather near London, 1861.				THE COUNTRY.	
M	W	Sun	Sun	BAROMETR.		THERMOMETER.			Rural Sights and Sounds.
D	D	rises	sets	Mr.	Min.	Mr.	Mn.	Me.	
		h.m.	h.m.						
1	Su	3 50	8 5	29.805...	29.795	67...	38...	52.5	Water avens flowers
2	M	3 50	8 6	29.863...	29.779	72...	43...	67.5	Yellow iris flowers
3	Tu	3 49	8 7	29.997...	29.968	64...	40...	56.5	Trailing burnet flowers
4	W	3 48	8 8	30.019...	30.003	67...	45...	56.0	Sweet briar flowers
5	Th	3 47	8 9	29.959...	29.907	71...	40...	55.5	Water violet flowers
6	F	3 47	8 10	29.997...	29.951	59...	48...	53.5	Water gladiolus flowers
7	S	3 46	8 11	29.917...	29.899	65...	46...	55.5	Butcher bird active
8	Su	3 46	8 12	29.884...	29.860	61...	40...	50.5	Blackcap sings
9	M	3 45	8 13	29.727...	29.662	60...	40...	54.5	Yellow rattle flowers
10	Tu	3 45	8 13	29.939...	29.757	68...	40...	57.0	Enchanter's nightshade flow-
11	W	3 45	8 14	30.062...	30.026	70...	47...	58.5	Sticklebacks in brooks [ers
12	Th	3 44	8 15	30.127...	30.086	78...	42...	60.0	Dodder flowers
13	F	3 44	8 16	30.172...	30.084	81...	54...	67.5	Bird's-nest orchis flowers
14	S	3 44	8 16	30.044...	30.002	82...	44...	63.0	Snakes abundant
15	Su	3 44	8 17	30.001...	29.941	85...	51...	68.0	Butterwort flowers
16	M	3 44	8 17	30.010...	30.002	80...	52...	68.0	Redstarts in flocks
17	Tu	3 44	8 17	30.021...	30.006	81...	44...	62.5	Buckbean flowers
18	W	3 44	8 17	30.058...	30.010	82...	58...	69.0	Water lilies flower
19	Th	3 44	8 18	30.010...	30.000	89...	52...	70.5	Poppy, groundsell, & bugloss
20	F	3 44	8 18	29.887...	29.809	84...	51...	67.5	Sedum alba flowers [flowers
21	S	3 45	8 18	29.918...	29.813	78...	68...	68.5	Sedum acre flowers
22	Su	3 45	8 19	29.902...	29.722	76...	40...	69.5	Red fumitory in gardens
23	M	3 45	8 19	29.749...	29.682	77...	51...	64.0	Charlock flowers on banks
24	T	3 45	8 19	29.827...	29.777	77...	52...	64.5	Valerian and samphire flowers
25	W	3 46	8 19	29.795...	29.618	68...	41...	54.5	Caterpillars of vapourer moth
26	Th	3 46	8 19	29.625...	29.585	75...	44...	59.5	Caterpillars of tussock moth
27	F	3 47	8 19	29.741...	29.688	80...	44...	62.0	Feather grass flowers
28	S	3 47	8 19	29.813...	29.687	79...	55...	67.0	Forget-me-nots on banks
29	Su	3 48	8 18	29.842...	29.688	72...	45...	58.5	Mallows flower
30	M	3 48	8 18	30.050...	29.967	69...	45...	56.0	Meadow-sweet in flower

NOTES FOR THE GARDEN.

KITCHEN GARDEN.—In cutting asparagus, take only the strongest shoots. Give plenty of water and weak liquid manure. Transplant from seed-beds, as fast as the young plants get at all thick, and use the hoe wherever weeds appear, so as to keep them down before they have time to flower. Weeds grow apace, and the pests of the garden are in fullest vigour. Prick out oenotheras from the seed-bed; plant celery in trenches well manured; transplant cabbage, kale, broccoli, etc., between showers, or else give plenty of water. Plant out vegetable marrows, ridge cucumbers, tomatoes, and capicums. Hand-weed onion beds. Potatoes ought to have been all planted long ago, but if there is room for a patch where any other crop has been taken off, they may still be got in. Thin out wherever crops are crowded, and keep the hoe and water-pot in constant use, and let not a drop of liquid manure or liquid sewage be wasted. The best season for transplanting hardy evergreens is during June and July. Any gaps in the borders and shrubberies may therefore be at once filled up, and beds of rhododendrons and other Americans may be planted. Water well until the July rains come on, after which they will be safe.

Sow salads, kidney beans, broad beans, and

peas, for succession. Sow principal crops of broccoli and turnips.

FRUIT GARDEN.—Thin the fruit on wall trees, and syringe all trees that are at all affected with vermin. Clear weeds away from strawberry beds as fast as they appear. A regular system of disbudbing wall trees should now commence, with a view to get regular growth, and all but wholly supersede the use of the pruning knife. Rub off every bud that breaks where a shoot is not wanted, and continue the operation during the whole of the summer. Give plenty of water to strawberries in dry weather, and, occasionally, a pretty strong dose of liquid manure. Cut away runners, unless wanted for increase of stock. Vines want frequent attention now, to thin out superfluous shoots, and train any wanted to cover any gaps in the wall. Bud plums, peaches, and apricots. Prune away the centre shoots of currants and gooseberries, to keep the bushes open.

GREENHOUSE AND STOVE.—Get as many plants as possible into frames and pits. Strike fuchsias, geraniums, verbenas, and petunias for blooming in pots in the autumn. Stop them frequently, to get bushy growths. Cut down cinerarias that have bloomed, and plant the stools for

offsets. Cut in pelargoniums that have flowered, and strike the best of the cuttings. Calceolarias coming into bloom should have a shady part of the house, and the pots plunged in moss. Camellias should be kept warm and moist, to induce a quick growth of new wood; those that have made their young shoots should have air by degrees, preparatory to turning them out for the summer. Keep the syringe and fumigator in frequent use. Thin the bunches of vines that have set their fruit, and put sulphur paint on the pipes whenever red spider appears. Fire-heat to be dispensed with as much as possible. Stove 65° to 70° at night; 75° to 85° by day. Pines require 75° at night, and 85° to 90° by day. As soon as the ordinary stock is turned out to harden, clear the house, and get some balsams and asters forward to keep the stage gay during the next two

months. Put up shading to prolong the beauty of plants in flower. Cut in any plants that have done blooming; repot pelargoniums when they have made plenty of short shoots. Stove plants will want abundance of water, and New Holland plants should have frequent shifts.

FLOWER GARDEN.—June is the season for general bedding-out, and dull weather should be chosen for the task. Dahlias may still be put out, and late blooming herbaceous plants may be planted. Pompones struck now will make good plants. Syringe roses with weak tobacco-water, if at all infested with fly, follow with a syringing with clear water. Plunge pot-plants in coal ashes, or cocoa-nut refuse. Shade flowers intended for exhibition. Take up bulbs as soon as the leaves fade.

TO CORRESPONDENTS.

BEDDING PLANTS.—*Minnie.*—From the end of June to the end of July is the best time to take cuttings of all kinds of bedding plants for stock. Gardeners do not generally begin till August, but they can better make up for lost time than people who are less expert. We are going back to the old plan of striking all our cuttings in pots singly, the plants are by this method much harder than those struck in the open ground, as they fill the pots with roots, and then ripen their wood well, whereas plants from the open ground are sometimes sappy, and the potting them up for the winter sets them growing again, just when those struck in pots are ceasing to grow through being pot bound. Our reason for the change is that we keep our soft-wooded bedding plants in a very damp house, which is heated with one of Musgrave's patent slow combustion stoves, the house being below the level of the garden, in a clayey soil, has sometimes a foot of water in it. Last winter we did not lose one per cent of geraniums, petunias, verbenas, etc., though the only way of getting in sometimes to attend to the fire or give air was by means of "stepping stones," formed by placing inverted garden-pots along the path. Now, whenever it is common to have losses by damp, we advise the striking of all cuttings singly in thumb pots, and early, then to shift to 6's, in poor sandy stuff, and in those to let them remain till spring; they will be so hard and ripe that, with ordinary care, damp will not easily affect them. Grass on strawberry beds invites slugs and woodlice, and therefore it is a very bad material to mulch with; the best mulch ever used is the cocoa-nut waste, which when done with for one purpose can be raked off and used for another, and so on *ad infinitum*, and the more rotten it gets the better it will suit as a soil for ferns, and to strike cuttings in. We never knew mountain ash to encourage blight, and we rarely see it blighted.

MANSOON'S PATENT IMPERISHABLE STONE.—We understand that there will shortly take place a great sale of garden ornaments, fountains, rockeries, vases, jardinettes, etc., of this material. Not having received particulars we cannot state when or where the sale will take place, we suppose at the office of the patentees, Cannon Row, Westminster. As the sale may be over before our next number is published, we call attention to it now, that our friends may be on the look out for advertisements, as this will be a fine opportunity for obtaining, at a cheaper rate than ordinary prices, examples of the best material, and the best

designs ever yet adopted in the manufacture of stone work for the garden.

FLOWERS SENT.—*Torquay.*—Some of the auricles were good, but we could not make much of them, owing to the damage they sustained in passing through the post.—*Lawrence Waltham.*—The pelargonium is a good second-class flower, and will probably throw some good seedlings. It had fallen to pieces when we opened the box, so that we could only judge it by separate petals. It is cheerful and distinct in colouring.—*E. Oubridge.*—Much obliged for the seedling geranium. It is the best flower, and the best truss of all the moderate growers we have yet seen. Don't keep it entirely to yourself. Call it Newington Pet, and let the world have the benefit of your skill. If you can make enough stock, plant a bed at once, and let us see how it behaves in the open ground.

MANURING CONIFERS.—In the last number of the "Edinburgh Philosophical Magazine," is an account of two araucarias in the Botanic Garden, which like Benjamin had more luxuries than their fellows, thirty barrels of water a-piece in May 1880, and triennial dressing of loam and rotten dung round the circuit of their roots. I presume they thrive in proportion—at all events, they felt the succeeding winter all the more for their extra development. But the popular notion is that conifers are not partial to manure, or, indeed, object to it. At all events, the "Penny Cyclopædia," Art. Manures, mentions them as the only plants for which manure is positively bad.—*T. T.* [Mulching is not exactly manuring. Of course, much of the ammoniacal strength of the mulch is carried down by the water to the roots, but the roots do not touch the manure. It is astonishing what an abundant supply of water will do for conifers from the end of April to the end of June, and all choice garden specimens should have as much as can be given them. It is a question, however, if trees so pushed into luxuriant growth make good timber, or ripen their wood satisfactorily. Let us not forget the winter of 1880-81, when conifers which had grown wonderfully in consequence of the wet, perished equally wonderfully when the frost caught them.]

JACKDAW IN A GARDEN.—*Amateur.*—We once, and only once, had one of these sooty genies loose in a garden, and a very amusing friend he was. His chief delight was to swallow somebody's finger, as often as permitted, and he objected to the finger being withdrawn. The only

HANBOLINIUM ATRO-RUBENS.—A magnificent composite from Mexico, well adapted to grow for exhibition in collections of greenhouse plants. The cordate leaves are of a deep bronzy green, the mid ribs and leaf-stalks rich crimson, the flowers in large corymbs of delicate lilac purple, the beauty of which is intensified by the vivid crimson of the flower-stalks. We are not aware if it has yet found its way into any English collections, but as it was introduced to Ghent by M. Verschaffelt, it will find its way here in time, and we advise plant-growers to be on the look out for its appearance in nursery catalogues.

LAPAGERIA ROSEA.—This finest of greenhouse climbers has been the subject of much discussion as to the method of culture best adapted to its peculiar constitution. It has also been the cause of more disappointments, perhaps, than any plant introduced during the last quarter of a century, for when seen in a fine condition, as it may be seen now at the nursery of Messrs. A. Henderson, Edgeware Road, it has such a grand appearance, and is obviously so easy to manage, that nearly all who see it determine to grow it, and nearly all who determine to grow it, fail either to get it to bloom or to keep it alive. Yet it is an easy thing to grow it, once set it going properly, and go it will, up any length of rafters, across the house on rods and chains, or over a trellis of almost any dimensions, and bloom as fully as any climber known. To grow it in a pot is simply to trifle with it, and it will not make useful roots in any soil but a turfy peat. The plant at Messrs. Henderson's is in a bed about fifteen feet long by four feet wide. In a moderate-sized house, a bed across the end of the house, and about two and a-half or three feet wide, will answer very well. Dry, good, tough peat will suit, even if black bog in which delicate heaths would not thrive, but it must be peat with a moderate amount of fibre in it. The bed should be raised with a front of bricks or stones, two feet high, and a pipe from a cistern should be

brought in, so that at any time the whole bed may be flooded with water. It is the peat, the water, and the abundant root-room that give vigour to *Lapageria*, and cause it to rush up the trellis almost as fast as a convolvulus. As to temperature, it requires protection from frost, and that is all that need be said about it, for *Lapageria rosea* is quite hardy, and must be kept as airy as a Cape heath.

But proper planting and watering are not the only requisites to success. Plants from cuttings rarely do any good. Mr. Summers, manager of Messrs. Carter's Forest Hill Nursery, remarked to us the other day that when at Mr. Mongredien's, he frequently bought *Lapageria*, and always lost it if the plant was a rooted cutting. Messrs. Henderson raise their stock by layering on the bed, and these rooted layers generally do well. But the safest method is to raise it from seed, and this the trade begin to understand, and accordingly seedling plants are now grown at some nurseries, and with such there is no risk at all. As soon as they have filled 48-pots with roots, they should be turned out, and from that moment the plant should be treated as hardy, for artificial heat, except to keep it safe from frost, is most injurious.

THE BEST TWELVE BEDDING DAHLIAS.

—Captain Ingram, crimson maroon, shows an eye, a tremendous bloomer, two feet; *Alba nana floribunda*, white, compact habit, two and a-half feet; *Lilacina variegata*, lilac flowers, variegated foliage, two and a-half feet; *Prince Arthur*, crimson, two feet; *Sir James Watts*, deep scarlet, good enough for exhibition, two and a-half feet; *White Unique*, white, small flowers in clusters, two feet; *Golden Ball*, deep yellow, the best bedder we have, two feet; *Crystal Palace Scarlet*, scarlet, blooms late, two and a-half feet; *Queen of Whites*, white, two and a-half feet; *Titian*, pure yellow, flowers loose, very showy, two and a-half feet; *Zelinda*, purple, good habit, two feet; *Beauty de Massifs*, bright scarlet, two and a-half feet.

NOTES BY THE WAY.

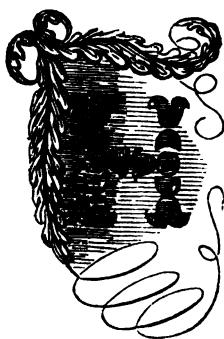
FOLIAGE BEDDERS

My ribbon of foliage plants made such a fine feature last year, that though I grew a set of *fuchsias* for this season, I could not resist the temptation to run in the old

track, and I have now planted four rows as before, with a centre bed in the same style, reserving the showy subjects for the lower part of the garden, where my favourites would have less effect. It is a matter of no small importance for ama-

THE FLORAL WORLD

AND GARDEN GUIDE.



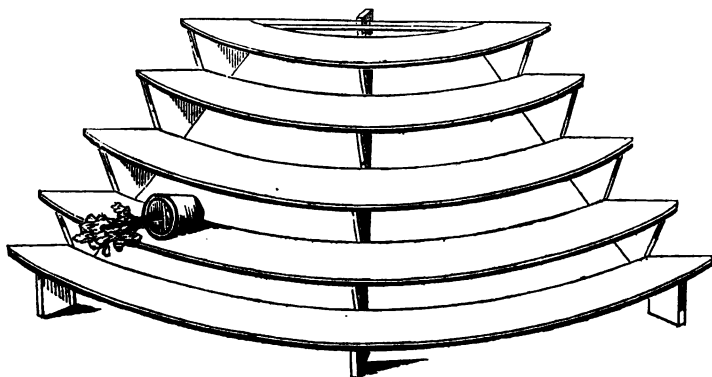
JULY, 1862.

HAVE you seen the portrait of the man who shot the sparrows? Is there any reader of the **FLORAL WORLD** who has an ambition to share the fame of that unhappy creature? We feel persuaded that, of all the gardening journals, we count fewer bird-killers than any, and a word on the prevailing topic of the season may not be so much needed here as in other quarters. Still we cannot allow the subject to pass by, for it concerns the interests of all classes of gardeners, and from the first we have advocated the cause of the birds against the slanderers who first tarnish their characters, and then destroy their lives. Never, in the recollection of any one now living, has there been such a devastation of fruit trees and roses by various kinds of blights, as during the spring of 1862. We have seen whole orchards, in the month of May, with scarcely a leaf on any tree by which to identify its kind, and fruit there was none, either for identification or promise of future repayment for rent and care. Caterpillars have swarmed amongst trees of all kinds, in much the same plenty as we read of locusts in the East, and this present season in Hungary; it was past all human power either to keep down the marauders, or render the trees capable of resisting their attacks. We may attribute this outbreak of vermin to the fine summer of 1861, when moths and butterflies deposited an unusual abundance of eggs, and the mild winter that followed, when but few were killed. But the lack of small birds is the great evil. Generally speaking, the cocoons of eggs, which are carefully placed in the chinks of the bark of trees or old woodwork, and in other neglected places, are capable of withstanding any amount of frost; in fact, the severity of the winter has but little to do with reducing the numbers of the brood which the spring sun will hatch out, and it is to the quick eye and discerning appetite of the bird for savoury morsels, that we must chiefly trust for remedy. Again and again, when correspondents have written to us about the best way to kill birds, we have invariably said leave them alone to lead their own life, for they are needed to maintain

tion of a compost for fuchsias, balsams, cockscombs, and whatever likes a rich light soil; without dung it is just the thing for pelargoniums, and even ericas and rhododendrons will grow in it. I have some plants of *Calluna vulgaris*, not an easy thing to grow, though it covers many a square mile of waste and common, and the mixture suits them as well as Wimbledon peat. Most of the hardy ferns like it, and if farther supplies were easily obtainable, I should use it instead of turf for the cucumber beds. In many an old garden where the fences have outgrown their boundaries, and a hundred loads of loppings and prunings might be got together in winter, this kind of mixture could be prepared every year, and pay for the trouble in potatoes the next season. Clay, loam, turf, any sound staple mixed with it, gives it body, and the potatoes root into

the Floral Hall, Covent Garden, as described in the *FLORAL WORLD* at the time the rose show took place there. The construction and use is shown in the annexed diagram.

Any plant that makes a dense head of bloom will do for this sort of display; a centre of white cinerarias, and two sides of crimson or blue cinerarias, made a grand spectacle this season on the occasion of a birth-day fete. A centre of *calceolaria Aurea floribunda*, and the sides of Lord Raglan or Prince of Prussia verbenas would do now as well as anything. Plenty of plants of two or three sorts to make even surfaces of colour from top to bottom, are the proper materials for furnishing. Any who adopt this scheme will adopt also their own modes of furnishing, and it only remains to give a hint as to maintaining the show for any length of time, as it is ob-



Exhibition Flower Stand.

the leaf and half-rotted green stuff, and hasten its complete decomposition.

FLOWER SHOWS AT HOME.

A friend of mine has lately had a large hall fitted so that it can be made at an hour's notice either a picture gallery or a flower show. He has had copies made of certain celebrated pictures on canvas to roll up like drop-scenes at a theatre, the rollers and cords are hidden with a cornice, and when the pictures are shown, they fall down into gilt mouldings, so as to appear like great oil paintings in handsome frames. To make the change the pictures are rolled up and disappear under the cornices, and flower stands, made to take to pieces and fit together with bolts and screws, take their places. They are made on the plan of the great semicircular stand used at

vious the same plants will not endure to be laid on their sides long without either getting dried at the root or turning their heads up so as no longer to present a full face to the spectator. It is imperatively necessary, therefore, to remove the whole of the plants every night to a clean pavement or flooring of tiles, and there soak them with water, and leave them till the morning. They may then be replaced on their sides and the same plants will hold out for a fortnight. My friend's hall has a garden entrance, by means of which the work is done without any disturbance of the household.

PICKARD'S PLANT CASE.

Mr. Chitty's mention of this in his interesting papers on "Flowery Windows," reminded me that it was time we figured it

ABOUT ROSES.

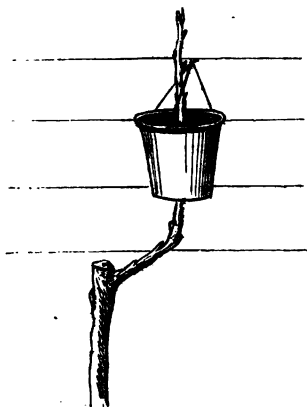
THE heavy rains during the middle of June were of more value to roses than to any other plants in our gardens. Generally speaking, roses had a melancholy look during the latter part of April and the whole of May, and there was little promise of a good bloom. What with green-fly, caterpillar, and east winds, most of the standards had a shrivelled and shrunk appearance, though dwarfs on their own roots withstood the assaults much better. At the first start of the season my roses began to grow most luxuriantly. They then halted, and from the end of April to the end of May made little growth, and gave up a great proportion of their best buds to the caterpillar. The hot weather of May favoured all the blights that beset the rose, and except where hand-picking and syringing were used without stint, the rosery held out but little promise of summer glory. But the whole case is changed, and these recent rains have reminded me of the desperately wet season of 1860, when the general health and first bloom of the roses was almost without parallel. It was one redeeming feature of that disastrous year. Nature's lesson, then, is the same as that of the books—that roses like water. Therefore let the idea of a plentiful water supply prevail in all your schemes of rose culture.

My roses are not so good this year as usual, partly through the overpowering assaults of caterpillar, and partly through inattention. But no one would condole with me just now, in fact the general verdict is that they look magnificent; however, I know all the shades of comparison between best and worst, and mine, as a whole, are a few shades below the standard I set up for myself as adviser in general to rose cultivators. For the sake of deriving as much knowledge as possible from the facts before me, let me here remark on the varieties which are now in a showy condition. Looking round the two semicircles, and along the front of the hollyhock piece, I recognize several old friends, Jules Margottin, General Jacqueminot (H. P. and H. C.), Souvenir de la Reine d'Angleterre, Géant des Batailles, Baronne Prevost, Madame Laffay, August Guinoisseau, William Jesse, the pretty Fellenberg (N.), Prince Leon, Madame Vidot (exquisite in its first bloom), Colonel de Rougemont, Cardinal Patrizzi, Alphonse Karr, Victor Verdier, Virginal, Madame Domage, Charles Duval, Brennus, Souvenir de Malmaison, Ophirie, Gloire de Dijon, and Lord Raglan. These are all in rich attire, the blooms in plenty, and the quality good; but I cannot say they are quite equal to what I expect my roses to be, as to the size of the blooms and the thickness of the petals. However, good judges tell me I am well off, and so of the foregoing I only need further remark, that if there is any one you do not possess, you ought to order pot plants at once, in order to see a few blooms this season, and determine exactly what to do before the season of autumnal planting. Now for a few special names, Nicholas Bellot is a rose I have grown during the past seven years, and always found it good. It has not been mentioned before, through the fact that it has hitherto been tallied with a number only, and in revising the tallies lately I was struck with shame, that I never recommended that rose as good for any garden, and particularly good for rosarians residing near towns. Next I must say of Anna Alexieff, that she gives more blooms than any other high class hybrid perpetuals except the General and the Giant. From the end of May to

suited to amateurs who are not expert at striking cuttings. It is that of "circum-position," by means of which a growing branch is made to root in a pot without removing it. It is applicable especially to roses and vines, and many other subjects that make long shoots, such as can be drawn through a pot. I have now some nice pot vines, which were rooted last year by taking rods up through pots placed one above another on open shelves, and when the pots were full of roots, each was cut away by passing a sharp knife through the rod under the bottom of each pot. I have frequently got plants of teas and other delicate Chinas by this process, which was largely practised by my father, who taught me how to do it when I was twelve years of age. There is now in the garden a seedling Bourbon of some character, which I worked on a briar five years ago, and it had a grand head when the winter of 1860 caught it, and killed it back to one bud. That bud started last summer, and made one weak rod, and having no other plant of the variety, I must secure it on its own roots, or it may be lost. To make very sure, as this is a peculiar case, the tree was planted beside the wire trellis on which my espalier apples are trained. To the trellis I fixed a forty-eight-pot by means of copper wire, then drew the single shoot through, having first removed the side shoots that were in the way, and filled the pot with a light sandy mixture. In the course of another week from this I expect the pot will be full of roots. I shall then cut the shoots away close under the pot, and there will be one plant on its own roots and the remainder of the shoot will form a new head to the tree, so that the original standard will probably make as fine a plant as before the great winter punished it almost to the death. Now this is a mode of propagating which may be applied in various ways. First select the shoot to be rooted, then make a notch just to the wood on one side at a point convenient for its rooting in a pot. When the notch has healed, place the pot so that the branch comes through it, put either a tuft of moss over the hole, or a handful of crocks, and fill up with light sandy soil, say bits of old turf of the size of walnuts, chopped moss, and silver sand; keep it watered, and roots are sure to come in time. No leaves or pushing buds should be covered; better to rub them off.

If a trouble to draw the shoot through the hole in the pot, owing to the size of the leaves, break the pot in half, and then bring the parts together, and bind them with copper wire. A stake or the stem of

the tree to be rooted will support the pot, or if the plant to be propagated is in a pot, put it under a shelf on which the circumposed pot will stand. Another way is to



peg the shoots down on pots all round the parent plant, by which process I am now rooting a stock of Noisette Ophirie for a bed next year.

PLANTS RECOMMENDED.

Helleborus dumetorum.—In a shady nook of a rockery this forms a noble mass of foliage, and throws up very elegant spikes of green flowers. I should never have thought to mention it as of special value, had I not potted a few to grow under glass, where to group with ferns and other fine foliage plants it is most beautiful. Whoever will grow this in a cool house, will prize it as a treasure, and it may be had in any nursery for a shilling.

Azalea amana.—I am now completely satisfied about the hardiness of this rosy flowering gem. The plants of it in my upper peat bed have been one mass of bloom since the end of April, and are now fading off. I shall replant all my peat beds next year, as they are getting overcrowded, and in the new arrangement, *Azalea amana* will form the outside circle next the *Spergula* in the bed next the house.

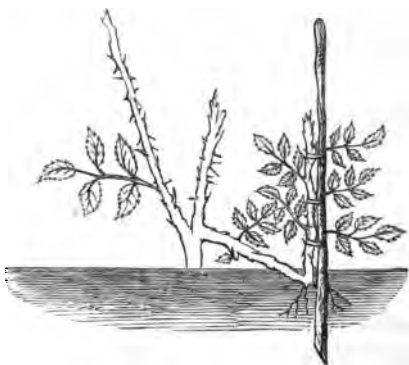
Onoclea sensibilis.—This lovely fern is quite hardy, but does better in pots than in the open ground. I put out three on my fern bank last year, and they have spread by their rhizomes so as to form now fifteen strong stools, all of which have been taken up and potted. Be sure to get this fern if you have not got it, and remember that it takes its specific name, *sensibilis*, from its extreme

removal to the far off country. It is not often that people think of building houses for roses; but for amateurs whose means are limited, and who have a taste for special subjects, there are few garden pleasures so readily accessible at a small cost as a collection of the most exquisite roses, in districts where few roses will grow naturally, in some cheap form of unheated structure. Besides this, most of our first class perpetuals attain additional luxuriance and beauty under glass, so as almost to change their character in the exquisite perfection of their foliage and flowers. The Paxtonian houses do away with side walls, stages, and tanks, and these are the things that make greenhouse building an endless expense. In the case of roses, hot-water pipes are not needed, unless there is an intention to force for early bloom, for without artificial heat strong plants under glass show bloom early in May, and the enjoyment of the garden begins without waiting for the bedders, and on the first day that the sunshine gives a welcome to people who wear thin shoes to walk across the grass.

None of the efforts of the FLORAL WORLD have been more successful than the instructions given from time to time on the propagation of roses. Numbers of our lady readers have good collections grown from eyes, by the plan first described in these pages. Any diligent reader of this work, who has taken interest in roses, should be able to bud, graft, propagate from cuttings, layers, or eyes, for all these modes have been illustrated, and in these ways, again, the ladies have been most assiduous, but especially with eyes and cuttings, which are methods peculiarly adapted for hands not used to thorns and clasp knives. For readers who have but recently joined us, it is but right to refer back to the places where the several methods have been described. For the mode of rooting in water, and transferring the rooted cuttings to pots, see Vol. i. p. 166; on bedding and striking cuttings and eyes, Vol. iii. pp. 149, 173. Roses for London, Vol. iii. p. 203. The indexes to former volumes will supply other references on every subject connected with rose culture, and in the April and June Nos. of this year, the propagation by circumposition has been treated.

But there is one old method of dealing with roses which has not yet been described in these pages, and I have a word to say about something new. The old method is that of propagating by layers, a certain but a somewhat slovenly method, which rarely produces plants equal to those from cuttings or eyes; but it is capable of some improvement as generally practised, the object being not merely of obtaining roots, but well shaped

plants from the first. The usual plan is to make a tongue on the under side of a shoot, remove an inch depth of earth, corresponding with the position of the tongue, and then fix the shoot with a peg, and leave it to take its chance. Generally the layers root at the tongue in the course of three weeks, and if soon after removed there is a fair chance that the majority are living and doing well; but the plants



border, and one of these drains should be laid under each arch. H. Shelf for strawberries, etc. I. Ventilators, twelve inches deep at front, and eighteen inches deep at back, of house; as many of these ventilators as can be possibly got in should be used, indeed, there should only be sufficient brick-work between them, for them to slide over when open, thus opening exactly one-half of the length of the house, both back and front; they should be connected the whole length by means of an iron rod, and should slide in grooves upon metal bearings; they can then be opened or shut by a cord passing over a pulley where they are *not within*

reach, or by a simple handle or knob, *where they are so*. J. Roller, and blind of canvas; in early forcing this will be necessary, both for protection by night, and occasionally for shade by day, especially when the vines are resting in July and August. K. Border, eighteen inches wide, for fig-trees. L. Doors. M. Flag stones against doors. N. Shutters over outside border. P. Water drain laid along the front of border. S. Chimney. W. Windows. 1. Stokery. 2. Potting-shed. 3. Mushroom-house. 4. Inside border for vines. 5. Outside border.

Whitwell.

H. HOWLETT.

A SELECTION OF PETUNIAS FOR BEDDING.

QUEEN: Rich rose, with white eye; cannot be beaten as a rosy pink, and has every quality requisite for a bedder. Lady Emily Peel: Rich violet, rose ground with a clear white throat. The form of this is really exquisite, and either in beds or pots it is a gem. It grows freely, and is a most abundant bloomer, and altogether surpasses Countess of Ellesmere, Marquis de la Ferté, and Shrubland Rose. Rosy Circle: Peachy rose, pure white throat, dwarf and compact habit, and altogether a true bedder. Fascination: Brilliant rose, white throat, good habit; endures drought well, and the best of the new rose-coloured bedders for hot sandy soils. Empress of the Crimson: Bright crimson, very large and showy, but the flowers flop about for want of substance. Ernst Benary: Rich violet purple; very large, fragrant, and free. Jeane Pécheur: Dark lilac, shading off to blue; very effective. Madame Annette Nicholas: White, mottled with delicate rose. Magna coccinea: Large crimson; a very showy bedder, but will not please fastidious eyes, having a loose spreading limb. Maid of Kildare: Pure white, very full and good. Manteau d'Evêque: Violet slate, very bright and effective. Ornement des Jardins: Reddish purple, black throat; fine. Prince Albert Improved: Deep crimson, free. Queen of Whites: The best white for beds. Silver Shield: Silvery white; good for pots or beds; a very neat and pleasing flower. The Bride: A really good white.

SINGLE PETUNIAS FOR POTS.

Graciosa: Blush, dark eye, red crimson belt round the throat; a very beautiful variety, and may be used in beds.

Pizarro: Lilac rose, dark eye, margined with violet red lines; fine form. Annie Salter: White, richly veined with dark purple crimson. Cœrulescens grandiflora: Blush, lilac ground, deep violet centre, purplish blue veins. Dr. Andry: Amaranth crimson, striped with white. Exquisite: Best white for pots. Coquette: Not easily described, but may be said to have a varying ground colour of white or purple, marked with violet blue bars from the centre outwards. No grower of petunias should be without it. Madame Henry Jacotot: Rich purple ground, belted and blotched with white; a very curious fancy flower, and blooms early in pots. Mademoiselle Annie Perrot: Rosy lilac, crimson centre; thoroughly good for either pots or beds. Marechal Canrobert: Violet rosy crimson; very lively and attractive. Purple Model: The best purple self for pots.

DOUBLE PETUNIAS FOR POTS.

An immense number of absolutely worthless varieties of double petunias are sent over every season from the Continent, and the catalogues get crowded with names that mean nothing, or at least nothing creditable to either raisers or vendors. At some of the French and Belgian nurseries, every seedling is named for the English market, and English nurserymen enter these varieties indiscriminately in their catalogues, and endeavour to screen themselves by the saving clause, "the descriptions are those of the continental raisers." We have bloomed an immense number of varieties of double petunias during the last five years, and we cannot now make a long list of really desirable kinds, owing to the large preponderance of rubbish. We

the artificial collar to induce quick rooting. The notches will push roots at once, and long before the next spring the trees will be fed by these new roots, and the lower ones will, in the course of twelve months, perish. The next step, then, is to lift the whole in the following November—a month later than the former planting will do this time—and then to cut away all the stem below the new roots. After this process *there will be no more suckers*, a fact worth remembering by growers of standard roses.

There is another use of this principle, and that is to convert standards into own roots in one season, and on this plan just as here figured. I am now rooting a few short-stemmed roses for mere amusement. There is no mystery about the process, as the cut explains it all. First, lay down the plant to be dealt with to see which side should be uppermost, to make the nearest approach to a decently-shaped bush. Perhaps a few main branches will have to be removed on the side to be laid downwards; if so, there will be no need of a notch, as the wound made in cutting those branches away clean to their base will form a callus for the protrusion of roots. If no cutting is necessary, make an incision *above the work*, that is, above the place where rose and briar were originally joined, and plant as in the cut, the roots of the briar to be not more than four inches below the surface, and the notched collar about two inches or less. I find that the roses grow and bloom well during the period while their first new roots are forming, and as soon as these roots are advanced they take the lead, and the old stem begins to perish, partly through its unnatural position, and partly through the overpowering vigour of the new roots near the surface. Next autumn or spring all thus treated should be lifted, the dead and half-dead stems and roots to be cut away, the strongest planted again in the open ground, and those with weak roots to be potted, and leave it to the rosarian to discover for himself the value of this notching system. If it is adapted only to convert into vigorous bushes worked trees that grow badly, where the stocks are old and hard, and the original junction decayed on one side, it will be something, I imagine, towards the rejuvenescence of old and debilitated roses.



SHIRLEY HIBBERD.

ROSE REMINDERS!

By the time your July Number is in the hands of your readers, the most important rose shows will be close at hand; perhaps, therefore, it will not be uninteresting to the rose amateurs among your subscribers, if a few varieties worth looking out for at the forthcoming exhibitions are pointed out. To begin with the novelties, it must be premised that it is impossible to determine their true character by

the produce of the forcing-house, or the experience of a single season, though the eye of the adept can generally perceive the germs of future merit, and form a tolerably correct estimate of what a flower is likely to turn out. I have seen about thirty of the new varieties in flower, and gleaned considerable information from various sources respecting them. It is somewhat remarkable how many of this

to the touch, forms a happy contrast with the flowers. It belongs to the natural order Leguminosæ, introduced from China in 1800.

PAPYRUS ANTIQUORUM, derived from the Syrian *babeer*, whence the Egyptian word *papyrus*, paper. It belongs to the natural order Cyperaceæ. It succeeds well if planted in a loamy soil, in a cistern of good depth, and produces its apetalous flowers in great luxuriance. It is from this plant the Egyptians made their paper, which was obtained from the pellicle between the flesh and bark of the thickest part of the stem, pressed and dried. Introduced from Egypt in 1803. [This will probably suit for planting out in the garden during the summer.]

NYMPHÆA CÆRULEA, a very ornamental plant, decking the aquariums of our stoves with its bright azure blue flowers, which it produces in abundance, if planted in a loamy soil with a gentle heat, and kept constantly immersed in water. It succeeds also nearly as well in a pond in a warm situation; but if the season be cold during the time of the expansion of its flowers, they seldom or ever expand so well as in a warm close atmosphere. This beautiful plant derives its name from *Nymphe*, a water-nymph habitation, and belongs to the natural order Nymphæaceæ. Native of Egypt, introduced in 1792.

VALLISNERIA SPIRALIS, named in honour of Antonio Vallisneri, an Italian botanist. This curious and remarkable water plant grows with great luxuriance, if potted in light turfy loam, and placed in deep water in a warm atmosphere; but succeeds nearly as well in a conservatory or greenhouse. It requires to be kept cool and dry during winter, and removed to the stove in February, which causes it to produce its richly tinted brown flowers in greater luxuriance than if kept in heat during the winter. It belongs to the natural order Hydrocharaceæ, and is indigenous to the South of Europe.

PONTERDERIA CRASSIPES.—This is an elegant plant, from its singularly formed, thick petioles, bright green, smooth, cordate foliage, and spikes of lovely blue flowers. It seems almost to despise the material in which most other varieties of aquatic plants rejoice, and floats about, regardless of any fixed station in the element to which it is naturally consigned, but succeeds well if potted in rich loamy soil, and placed in shallow water in a stove. It is named in honour of Julius Ponteder, a professor of botany at Padua, and belongs to the natural order Pontederaceæ. Introduced from Guiana in 1825.

ELODEA GUIANENSIS, from *Elodes*, a marsh, which is its natural situation. It produces its white and conspicuous flowers about the beginning of August, in a light loamy soil, where heat is kept up. Introduced from Guiana in 1820. It belongs to the natural order Fluviales.

PARKERIA PTEROIDES, named in honour of C. S. Parker, who first discovered this fern-like plant in Essequibo. Its flowers are dark brown, in a short whorl; and although they are minute, yet its serrated pinnate leaves render it somewhat interesting. It succeeds well in loam and peat with the roots only immersed in water. It belongs to the natural order Polypodiaceæ.

HYDROLEA SPINOSA.—This minute plant represents the order Hydrolaceæ; and its flowers vie with the intense blue of the empyrean. The stem and foliage are decked with numerous spines, as a protection to the charming buds which raise their graceful form above them. It grows most luxuriously in a loamy soil, in shallow water, and placed in a stove where heat is maintained. Its name is derived from *hydor*, water, *elaia*, oil. Introduced from South America in 1791.

VICTORIA REGINA.—This is the most popular aquatic, and most majestic in appearance: it flowers in January in its native country, Guiana. It was discovered by Sir R. H. Schomburgk, in 1837; he describes it as "a vegetable wonder." Its immense leaves are from six to seven feet in diameter, salver-shaped, with a broad rim of a light green above, and vivid crimson below. Its flowers, resting upon the water, are in character with the leaves, consisting of many hundred petals passing in alternate tints from pure white to rose and pink, about fifteen inches across. The leaf on its surface is bright green, in form orbiculate; the stem of the flower is an inch thick near the calyx, and is studded with sharp elastic prickles, about three quarters of an inch in length; the calyx is four-leaved, each leaf upwards of seven inches in length, and three in breadth; they are thick and white inside, reddish brown and prickly outside; the diameter of the calyx is twelve or thirteen inches. The magnificent flower, when fully developed, resting upon the calyx, completely covers it with its hundred petals; when it first opens, it is white with pink in the centre, which spreads over the whole flower as it advances in age; it is generally pink on the second day after its expansion: as an enhancement of its remarkable beauty it is also sweet-scented.

out. If you have no heat or glass, they will assuredly dwindle and die off, as several have done with me, to my cost; and unless you can get strong, stout-grafted plants, with two or three well-placed eyes, and on strong, stout Manetti stocks (such as

I get from Messrs. Fraser's, Lea Bridge Road), in forty-eight pots, full of roots, and ready to take hold of the ground at once, wait till those planted out are lifted in the autumn.

PRIOR.

Homerton, June 2nd.

ON THE CULTURE OF GARDENIA.

THE *Gardenia* was so named by Ellis in honour of his friend and correspondent, A. Garden, M.D., of Charleston, in South Carolina; it is a very beautiful genus, and most of the species are highly odoriferous.

G. radicans is a well-known and very favourite greenhouse shrub; it is a native of China, and was first grown in England in the year 1804. As a greenhouse plant it has scarcely a compeer in fragrance or beauty; in its native country too it is very highly prized. The Japanese, as Thunberg relates, form hedges of it, and ornament their houses, and the walks of the gardens with it, and other species of *Gardenia*. This is one of the very limited class of plants suitable for window culture, and there are only three of this genus which bear the character sufficient to warrant the phenomenon: these are *G. radicans*, *G. Thunbergia*, and *G. Rothmannia*, the remaining species are all properly stove plants. A difficulty is often experienced in the blooming of these plants, more especially the greenhouse kinds; sometimes the plants do not produce any flower-buds at all, and others may bring a sufficiency of buds; but they as often fall prematurely, much to the disappointment of the fair owners, for this genus is a most decided favourite of the ladies.

It may be useful to endeavour to trace the cause of this premature fall of the flower-buds, as the knowledge of the true cause of a failure is the first and most essential step towards the application of a remedy; these plants, when in a state of nature, inhabit a portion of the globe where the seasonal changes are very great, and consequently the seasonal growth of plants equally marked. Indeed, so

severe are the winters in some parts of the eastern world, and the effect of this tending to render the plants constitutionally robust, that was it not for the greater humidity of our climate, we might be justified in the expectation of acclimatizing all the plants of those countries. The effect of this has been already explained as instances have arisen, therefore what is now required consists chiefly in a practical view of the case. The plant, when placed in a room as a window plant, is subject to one undeviating atmosphere, the temperature of which is kept as nearly the same as possible, and through a mistaken kindness, supplied with water just as regularly; this is clearly the opposite of the plant in its natural state, for then during the summer months it has the full influence of the sun, with the benefit of the free air; and in winter, its only advantage is its annual covering of snow, just sufficient to protect it from the effects of frost, and which yields but very little humidity until it becomes thawed; and the same cause, namely the power of the sun, which supplies the plant with moisture by dissolving the snow, acts immediately on the energies of the plant, throwing it into a growth as luxuriant as it is sudden, and it is by this the treatment of the plant when in an artificial state should be regulated.

In the autumn, let the supply of water be gradually but certainly diminished, giving at last only just sufficient to keep the earth in the pots together; this should be continued from October till March, then let them be placed in a very gentle hot-bed, if at hand, or in a warm window, or part of the greenhouse, but the frame is the best, the heat of which

of Flower of the Day, edged with *Lobelia speciosa*.

Centre *Cineraria Maritima*, two rings of Little David Geranium, edging of *Gnaphalium lanata*—pegged down.

Centre Purple King Verbena, two rings of *Tropæolum* (true Crystal Palace variety) *Lobbianum elegans*.

Centre *Tropæolum Lobbianum elegans*, edged with Verbena Zampa.

Centre Trentham Scarlet Geranium, edged with White Verbena Snowflake.

Centre White Petunia, a ring of Verbena Geant des Batailles.

Centre Petunia magna coccinea, edged with *Cineraria Maritima*, kept dwarf.

Centre *Calceolaria aurea floribunda*, two rings of Imperial Crimson Nosegay Geranium, edged with Dandy Geranium.

Centre Verbena Firefly, two rings of Purple King, and a ring of Geranium Shrubland Pet.

Centre of Geranium Brilliant, a ring of Geranium *Gossularioides*, edged with *Cerastium Biebersteinii*.

Centre Ivy-leaved Geranium, edged with *Cuphea platycentra*.

Centre *Ageratum Mexicana variegata*, ring of Punch Geranium, edged with *Stachys lanata*.

Centre Verbena Mrs. Woodroffe, ring of Geranium Flower of the Day, outer ring of *Lobelia speciosa*, intermixed with *Cerastium Biebersteinii*.

Centre *Perilla Nankinensis*, ring of Cloth of Gold Geranium, edged with *Lobelia Kermesina*.

Centre Dahlia Zelinda, with two rows of Cloth of Gold Geranium.

Centre Yellow Hollyhocks, two rings of Crystal Palace Scarlet Dahlia, edged with Heliotropes.

Centre Dahlia alba nana floribunda, two rings of Crystal Palace scarlet Geranium, edged with *Gnaphalium lanata*.

Centre Dahlia, The Pet (beautifully spotted), ring of Dahlia Orb of Day, edged with Nosegay Geraniums.

Centre Purple Hollyhock, ring of Dahlia Queen of Whites, ring of Geranium Trentham Rose, edged with *Cineraria Maritima*.

Centre Geranium Lady Mary Fox, edged with Verbena Beauté Supreme.

Centre *Salvia fulgens variegata*, ring of *Ageratum Mexicana*, edged with *Cuphea platycentra*.

Centre *Salvia patens*, ring of *Ageratum variegata*, edging of Heliotrope La Petite Negress.

Centre *Delphinium formosum*, with ring of Yellow *Calceolaria*. [This we think horrible.]

Centre Geranium Crystal Palace Scarlet, with ring of *Cerastium Biebersteinii*.

Centre Verbena Purple King, edged with Geranium Golden Chain.

Centre Purple Nosegay Geranium, edged with *Agatheæ celestis variegata*.

Centre *Stachys lanata*, broad ring of *Lobelia speciosa*, edged with *Cerastium tomentosum*.

Centre Cannas, ring of *Tritoma uvaria*, ring of *Centaurea candidissima*, edged with *Lobelia speciosa Kermesina*. [Fit for large beds only.]

Centre Pampas Grass, ring of Cannas, ring of *Tritomas*, edged with *Gnaphalium lanata*.

Centre *Cerastium Biebersteinii*, and two rings of *Lobelia speciosa Kermesina*.

Mixed Beds of Geranium Flower of the Day and Scarlet Verbena.

Mixed Beds of Heliotrope and Scarlet Verbena.

Mixed Beds of *Gnaphalium lanatum* and Scarlet Geranium.

For Pincushion Beds—Geranium *Grossularoides* and *Cerastium Biebersteinii*.

For Pincushion Beds—Dandy Geranium and *Lobelia speciosa*.

COSTLESS VENTILATION.

A CONSTANT supply of fresh air is so important to our well-being, and in the prevention and cure of disease, that the subject needs no comment: an attendance, however, at any public meeting is only necessary to convince one how much this axiom is ignored—or if admitted, how unsuccessfully met.

For some time I adopted the plan of opening the window-sash at my patients' houses at the top, and stretching out on a

frame a corresponding depth of tarlatan, to intercept blacks and prevent draught; but, although a modification of, but not an improvement on, this method, has the support of a popular lecturer at an institution for the diffusion of art and science, the principle is wrong and the result unsatisfactory, as the draught is directed downwards on the sitter, and not upwards towards the ceiling: the screen, too, is anything but ornamental, and becomes clogged with

should look over his pyramids, and bushes, and espaliers, knife and scissors in hand, to pinch, prune, and tie, and for the remainder of the season there must be no more pinching. As for standards, the less they are pruned the better; a little thinning may be needed occasionally where branches cross each other, or where there is a crowd of sprays, but standards well grown from the first will, as a rule, take care of themselves. In regulating the bushes you will see on some a few long thin shoots that have escaped attention at former pinchings; a few of them perhaps have pushed their way backwards towards the stem, and through the furniture on the opposite side, so as to come out the wrong way. The writer has just seen a Marie-Louise with half a dozen long shoots thrust out in the wrong direction from buds at the base of side shoots having started in the wrong direction. There is but one way of dealing with such recreant growths, and that is to cut them clean away. Next look at the general contour of the tree, and wherever it is seriously irregular apply the knife and remove the growths that interfere with its symmetry, remembering it is not a matter of eye-sight merely, but that a symmetrical tree admits the sunshine to all its parts, and that to balance the growth equally is to ensure a perfect distribution of the sap, so as to induce a general instead of a partial bearing habit. You will now observe that the side branches of each leading side shoot vary in size and strength; some are close like buttons with about three leaves attached, these are true spurs, from which next year you may expect fruit. Others that have been pinched back to the third or fourth leaf have pushed again, and are covered with little sappy side shoots. These last may be converted into fruit spurs at this season by cutting them back with a sharp knife to the third or fourth bud from the base, and if the leader on which they are placed is in full vigour the sap will flow outward to increase the length of the leader, and there will be no fear of the short shoots pushing, but instead the buds will swell and the little twigs

will become the fruit spurs artificially produced. All good leaders in full health and well-placed should be allowed to grow untouched till the last week in August, then cut them all back in proportion to their strength, generally to about half the length of this season's growth. This will assist the ripening of the wood left, and throw additional strength into the dormant buds. When November arrives look over the trees again, and with a sharp knife cut back to good buds any soft or ill-placed shoots.

In his entertaining and invaluable work on the "Miniature Fruit Garden," Mr. Rivers says: "In the final shortening in August those that are very vigorous must not have their shoots pruned so closely as those that are less so; indeed, almost every variety will require some little modification in pruning, of which experience is by far the best teacher. It will, I think, suffice, if I give the following directions for shortening the leaders of the side shoots and the perpendicular leaders:—All those that are very robust, such as *Beurré d'Amanlis*, *Vicar of Winkfield*, *Beurré Diel*, etc., shorten to eight or ten inches, according to the vigour of the individual tree; those of medium vigour, such as *Louise-Bonne of Jersey*, *Marie-Louise*, and *Beurré d'Aremberg*, to six inches; those that are delicate and slender in their growth, like *Winter Nelis*, to four inches; but I repeat that regard must be had to the vigour of the tree. If the soil be rich, the trees vigorous, and not root pruned, the shoots may be left the maximum length; if on the contrary, they be root pruned, and not inclined to vigorous growth, they must be pruned more closely."

Soils that do not suit the pear may be improved for the purpose by very simple methods. In places where the soil is a hungry peat, the pear grower should procure turves cut very thin from roadsides and wastes, and lay them up in heaps all summer for use in the autumn. Then a few barrows of clay or stiff loam added to the bulk, and about a sixth part of rotten dung, will render it suitable for any pear of ordinary good habit. Clay

HEPESOLINIUM ATRO-RUBENS.—A magnificent composite from Mexico, well adapted to grow for exhibition in collections of greenhouse plants. The cordate leaves are of a deep bronzy green, the mid ribs and leaf-stalks rich crimson, the flowers in large corymbs of delicate lilac purple, the beauty of which is intensified by the vivid crimson of the flower-stalks. We are not aware if it has yet found its way into any English collections, but as it was introduced to Ghent by M. Verschaffelt, it will find its way here in time, and we advise plant-growers to be on the look out for its appearance in nursery catalogues.

LAPAGERIA ROSEA.—This finest of greenhouse climbers has been the subject of much discussion as to the method of culture best adapted to its peculiar constitution. It has also been the cause of more disappointments, perhaps, than any plant introduced during the last quarter of a century, for when seen in a fine condition, as it may be seen now at the nursery of Messrs. A. Henderson, Edgeware Road, it has such a grand appearance, and is obviously so easy to manage, that nearly all who see it determine to grow it, and nearly all who determine to grow it, fail either to get it to bloom or to keep it alive. Yet it is an easy thing to grow it, once set it going properly, and go it will, up any length of rafters, across the house on rods and chains, or over a trellis of almost any dimensions, and bloom as fully as any climber known. To grow it in a pot is simply to trifle with it, and it will not make useful roots in any soil but a turfy peat. The plant at Messrs. Henderson's is in a bed about fifteen feet long by four feet wide. In a moderate-sized house, a bed across the end of the house, and about two and a-half or three feet wide, will answer very well. Dry, good, tough peat will suit, even if black bog in which delicate heaths would not thrive, but it must be peat with a moderate amount of fibre in it. The bed should be raised with a front of bricks or stones, two feet high, and a pipe from a cistern should be

brought in, so that at any time the whole bed may be flooded with water. It is the peat, the water, and the abundant root-room that give vigour to *Lapageria*, and cause it to rush up the trellis almost as fast as a convolvulus. As to temperature, it requires protection from frost, and that is all that need be said about it, for *Lapageria rosea* is quite hardy, and must be kept as airy as a Cape heath.

But proper planting and watering are not the only requisites to success. Plants from cuttings rarely do any good. Mr. Summers, manager of Messrs. Carter's Forest Hill Nursery, remarked to us the other day that when at Mr. Mongredien's, he frequently bought *Lapageria*, and always lost it if the plant was a rooted cutting. Messrs. Henderson raise their stock by layering on the bed, and these rooted layers generally do well. But the safest method is to raise it from seed, and this the trade begin to understand, and accordingly seedling plants are now grown at some nurseries, and with such there is no risk at all. As soon as they have filled 48-pots with roots, they should be turned out, and from that moment the plant should be treated as hardy, for artificial heat, except to keep it safe from frost, is most injurious.

THE BEST TWELVE BEDDING DAHLIAS.
—Captain Ingram, crimson maroon, shows an eye, a tremendous bloomer, two feet; *Alba nana floribunda*, white, compact habit, two and a-half feet; *Lilacina variegata*, lilac flowers, variegated foliage, two and a-half feet; *Prince Arthur*, crimson, two feet; *Sir James Watts*, deep scarlet, good enough for exhibition, two and a-half feet; *White Unique*, white, small flowers in clusters, two feet; *Golden Ball*, deep yellow, the best bedder we have, two feet; *Crystal Palace Scarlet*, scarlet, blooms late, two and a-half feet; *Queen of Whites*, white, two and a-half feet; *Titian*, pure yellow, flowers loose, very showy, two and a-half feet; *Zelinda*, purple, good habit, two feet; *Beauty de Massifs*, bright scarlet, two and a-half feet.

NOTES BY THE WAY.

FOLIAGE BEDDERS

My ribbon of foliage plants made such a fine feature last year, that though I grew a set of fuchsias for this season, I could not resist the temptation to run in the old

track, and I have now planted four rows as before, with a centre bed in the same style, reserving the showy subjects for the lower part of the garden, where my favourites would have less effect. It is a matter of no small importance for ama-

be greatly changed, and there will be a disposition on the part of the varieties worked on Prince Albert to form fruit spurs from the first. At some nurseries the shy kinds may be had already double-worked, Mr. Rivers having frequently called the attention of the trade to the necessity of this mode of treatment. His plan is to use any free-growing varieties for the purpose, Prince Albert and Besi Goubault being the favourites. These worked on the quince are allowed to grow one season; they are cut down the following spring, and grafted

with delicate growing kinds. The following among others succeed best when double-worked:—Beurré Beckmans, Beurré Bosc, Beurré de Rancé, Broom Park, Eyewood (this grows freely on the pear, but to bring it into early bearing as a bush it must be double-worked), Gansel's Seckle, Marie-Louise, Tyson. In gardens where varieties known to be free bearers are found stubborn, they should always be tried by this plan, as it renders them less influenced by peculiarities of soil and situation.



SPERGULAS.

WE have received during the past month so many inquiries on the subject of *Spergula* lawns, that it seems best to offer a few general observations, such as will meet the cases of the several inquiries, and save the space usually devoted to categorical replies in small type, the increase of which in this work of late has brought complaints from readers who value their eyesight. Our correspondence on *Spergula* is of a cheerful kind; J. R., one of our most practical and cautious correspondents, finds it just the thing to carpet narrow verges in a town garden, and a letter now before us, from the gardener of a gentleman in the west part of Suffolk, gives the pleasing intelligence that a lawn of half an acre has been formed in two seasons, and is now in beautiful condition, and that the proprietor of the grounds intends to enlarge it, and for that purpose remove another great breadth of grass. Reference back to former pages, and especially pp. 156 and 271 of the volume for 1860, will place the reader in possession of more information respecting these plants than will be found in any other work. Yet there is still something to be said, or we should not have so many inquiries. One asks how late the seed may be sown; another how to get up a *spergula* carpet at the shortest notice, and a third complains that worms and weeds have well nigh

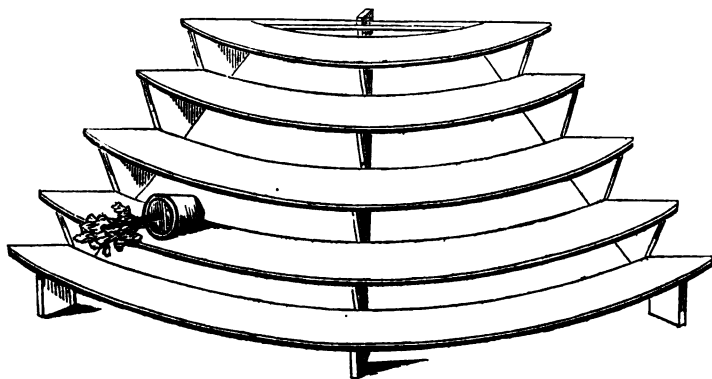
killed the patches that were planted last year.

From the present time to the end of August is as good as any in the year to commence the culture of *Spergula*. The quickest and most satisfactory method is to use tufts, which are attainable at a very cheap rate, and save very much trouble. The ground should be deeply dug, drained, and levelled. If poor, a liberal dressing of manure will be requisite; if sandy, *S. saginoides* is the best species; if clayey, *S. pilifera* is to be preferred. Respecting these two, it has already been remarked that the first grows very quickly, and is a darker shade of green than the second. I may add to the statement, as the result of experience, that *S. saginoides* is likely to supersede *pilifera* altogether, and though it likes sand, and in our first trial of it, it grew luxuriantly in a bed of gravel without a particle of manure or loam, nevertheless it will do on clay or loam equally well, if the position is well-drained. On the other hand, *S. pilifera* is not averse to sand, for at the edges of my circle of it the plant runs away from its boundaries into the gravel path, and there grows most luxuriantly, and as the gravel is at least a foot deep (probably more) it cannot be said that clay is indispensable. It comes to this, that the *Spergulas* are not particular about soil, and if after

tion of a compost for fuchsias, balsams, cockscombs, and whatever likes a rich light soil; without dung it is just the thing for pelargoniums, and even ericas and rhododendrons will grow in it. I have some plants of *Calluna vulgaris*, not an easy thing to grow, though it covers many a square mile of waste and common, and the mixture suits them as well as Wimbledon peat. Most of the hardy ferns like it, and if farther supplies were easily obtainable, I should use it instead of turf for the cucumber beds. In many an old garden where the fences have outgrown their boundaries, and a hundred loads of loppings and prunings might be got together in winter, this kind of mixture could be prepared every year, and pay for the trouble in potatoes the next season. Clay, loam, turf, any sound staple mixed with it, gives it body, and the potatoes root into

the Floral Hall, Covent Garden, as described in the *FLORAL WORLD* at the time the rose show took place there. The construction and use is shown in the annexed diagram.

Any plant that makes a dense head of bloom will do for this sort of display; a centre of white cinerarias, and two sides of crimson or blue cinerarias, made a grand spectacle this season on the occasion of a birth-day fete. A centre of *calceolaria Aurea floribunda*, and the sides of Lord Raglan or Prince of Prussia *verbena* would do now as well as anything. Plenty of plants of two or three sorts to make even surfaces of colour from top to bottom, are the proper materials for furnishing. Any who adopt this scheme will adopt also their own modes of furnishing, and it only remains to give a hint as to maintaining the show for any length of time, as it is ob-



Exhibition Flower Stand.

the leaf and half-rotted green stuff, and hasten its complete decomposition.

FLOWER SHOWS AT HOME.

A friend of mine has lately had a large hall fitted so that it can be made at an hour's notice either a picture gallery or a flower show. He has had copies made of certain celebrated pictures on canvas to roll up like drop-scenes at a theatre, the rollers and cords are hidden with a cornice, and when the pictures are shown, they fall down into gilt mouldings, so as to appear like great oil paintings in handsome frames. To make the change the pictures are rolled up and disappear under the cornices, and flower stands, made to take to pieces and fit together with bolts and screws, take their places. They are made on the plan of the great semicircular stand used at

vious the same plants will not endure to be laid on their sides long without either getting dried at the root or turning their heads up so as no longer to present a full face to the spectator. It is imperatively necessary, therefore, to remove the whole of the plants every night to a clean pavement or flooring of tiles, and there soak them with water, and leave them till the morning. They may then be replaced on their sides and the same plants will hold out for a fortnight. My friend's hall has a garden entrance, by means of which the work is done without any disturbance of the household.

PICKARD'S PLANT CASE.

Mr. Chitty's mention of this in his interesting papers on "Flowery Windows," reminded me that it was time we figured it

and alpine, and the rear of the bank was planted with *Spergula saginoides*. The soil of the bank is chiefly clay, and the soil of the slope at the rear wholly clay, beat to a firm smooth surface. The *spergula* was taken up from the experimental plot of gravel and planted all along the top line of the bank, and about eighteen inches down the slope at the end of April last. It is now spreading downwards rapidly, and what with the extension of its growth and the falling of the seeds, I have no doubt it will reach

the base of the bank this season. But it needs weeding and beating once a fortnight. If the slope had been turfed the clipping of the grass would have entailed quite as much trouble as is now occasioned in weeding and beating the *spergula*. As for *Sagina procumbens* it will grow anywhere in gravel, sand, or coal ashes; on a sound loam it makes a close and beautiful turf; but at the present season its blossoms have a dirty grey appearance, not favourable to its general adoption. H.

GARDEN IMPLEMENTS, ORNAMENTS, AND STRUCTURES.

LAWN MOWERS.

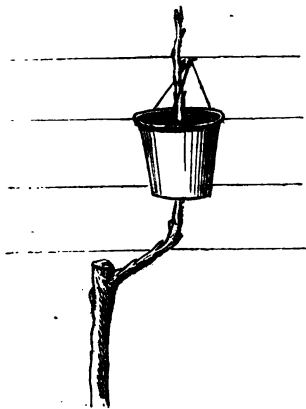
Horticultural visitors to the International Exhibition will find in the Eastern Annex an extensive collection of Garden Implements, amongst which Lawn Mowers have an important place. Messrs. Kennan and Son, of 19, Fishamble Street, Dublin, exhibit (No. 2141) a new contrivance, called the Registered Tilt Gear Lawn Mower. The cutting machinery is so arranged that a quick movement of the machine is not essential, so that it is well adapted to cut damp grass. But the chief peculiarity is, that there is attached below the driving-handles, a large supplementary grass-box; when the box in front of the cutters is full, the mower touches a handle, which throws the grass-box over, and empties its contents into the supplementary box, so that the machine has not to be stopped for the removal of the grass until both the boxes are full. A Jointed Ladder, shown by the same maker, will be found of great service in small gardens, as it can be used as a double step ladder five feet high, or a single step ten feet high. Other mowing machines are exhibited by Boyd (No. 2084), who first introduced the cleansing brush, Ferrable (No. 2113), who first matured Budding's original patent, and offers in these machines a contrivance for emptying the grass-box without necessitating any halt in the working of the machine. Mr.

Samuelson, of Banbury, and Cannon St., London, exhibits machines (No. 2178) with Boyd's patent brushes, and Mainwaring's silent wheels. The machines of Samuelson we can speak of in the highest terms, the cutting-knives being better adapted for mowing damp grass than any machine which we have tried for the purpose; during the summer of 1860, when the grass was always wet, we had one in constant use, and the manner in which it performed its work, under very severe tests, was the subject of general admiration among gardeners. The wooden boxes of these machines are, however, too slight, and they soon get split. It is but a minor matter, but it needs attention on the part of the manufacturer. Mr. T. Green, of Smithfield Works, Leeds, and Victoria Street, Holborn, exhibits a number of Grass Mowers (No. 2122); these are all beautifully finished, and their excellencies are well known, in fact, they cannot be surpassed for design and workmanship, and have attained their celebrity solely by their merits. Mr. Green has now perfected the Small Model Lawn Mowers that were brought out last year, and samples may be seen at his stand, on the western side of the Eastern Annex, of 10-inch silent-working machines, at the low price of £3 10s. each. We have one of these in use, a 12-inch, for verges and fancy work, which it performs beautifully; but though so

suited to amateurs who are not expert at striking cuttings. It is that of "circum-position," by means of which a growing branch is made to root in a pot without removing it. It is applicable especially to roses and vines, and many other subjects that make long shoots, such as can be drawn through a pot. I have now some nice pot vines, which were rooted last year by taking rods up through pots placed one above another on open shelves, and when the pots were full of roots, each was cut away by passing a sharp knife through the rod under the bottom of each pot. I have frequently got plants of teas and other delicate Chinas by this process, which was largely practised by my father, who taught me how to do it when I was twelve years of age. There is now in the garden a seedling Bourbon of some character, which I worked on a briar five years ago, and it had a grand head when the winter of 1860 caught it, and killed it back to one bud. That bud started last summer, and made one weak rod, and having no other plant of the variety, I must secure it on its own roots, or it may be lost. To make very sure, as this is a peculiar case, the tree was planted beside the wire trellis on which my espalier apples are trained. To the trellis I fixed a forty-eight-pot by means of copper wire, then drew the single shoot through, having first removed the side shoots that were in the way, and filled the pot with a light sandy mixture. In the course of another week from this I expect the pot will be full of roots. I shall then cut the shoots away close under the pot, and there will be one plant on its own roots and the remainder of the shoot will form a new head to the tree, so that the original standard will probably make as fine a plant as before the great winter punished it almost to the death. Now this is a mode of propagating which may be applied in various ways. First select the shoot to be rooted, then make a notch just to the wood on one side at a point convenient for its rooting in a pot. When the notch has healed, place the pot so that the branch comes through it, put either a tuft of moss over the hole, or a handful of crocks, and fill up with light sandy soil, say bits of old turf of the size of walnuts, chopped moss, and silver sand; keep it watered, and roots are sure to come in time. No leaves or pushing buds should be covered; better to rub them off.

If a trouble to draw the shoot through the hole in the pot, owing to the size of the leaves, break the pot in half, and then bring the parts together, and bind them with copper wire. A stake or the stem of

the tree to be rooted will support the pot, or if the plant to be propagated is in a pot, put it under a shelf on which the circumposed pot will stand. Another way is to



peg the shoots down on pots all round the parent plant, by which process I am now rooting a stock of Noisette Ophirie for a bed next year.

PLANTS RECOMMENDED.

Helleborus dumetorum.—In a shady nook of a rockery this forms a noble mass of foliage, and throws up very elegant spikes of green flowers. I should never have thought to mention it as of special value, had I not potted a few to grow under glass, where to group with ferns and other fine foliage plants it is most beautiful. Whoever will grow this in a cool house, will prize it as a treasure, and it may be had in any nursery for a shilling.

Azalea amana.—I am now completely satisfied about the hardiness of this rosy flowering gem. The plants of it in my upper peat bed have been one mass of bloom since the end of April, and are now fading off. I shall replant all my peat beds next year, as they are getting overcrowded, and in the new arrangement, *Azalea amana* will form the outside circle next the *Spergula* in the bed next the house.

Onclea sensibilis.—This lovely fern is quite hardy, but does better in pots than in the open ground. I put out three on my fern bank last year, and they have spread by their rhizomes so as to form now fifteen strong stools, all of which have been taken up and potted. Be sure to get this fern if you have not got it, and remember that it takes its specific name, *sensibilis*, from its extreme

EXHIBITION MEMORANDA.

DURING the past month the principal exhibitions have been—at Edinburgh on the 3rd; Royal Horticultural on the 11th and 26th; Royal Botanic, 18th; York, 18th and 19th. To report these shows in detail would occupy space unnecessarily; we shall, therefore, select, as on former occasions, a few of the most interesting subjects from each, to keep our readers informed of what is going on, especially as to the novelties brought into notice, and the established species and varieties that are most in favour with exhibitors:—

AZALEAS.—The best collections of these were at the Royal Horticultural on the 11th, and Royal Botanic on the 18th, which exhibitions, by the way, were nearly the same as to their leading features. Mr. May and Mr. Turner showed good collections at both exhibitions. The most telling varieties were Chelsoni Gem, Sir Charles Napier, Juliana, Stanley-anum, all salmon red, and magnificently shown by Mr. Turner; Lateritia, Iveryana, white striped; Vesta, pure white; Comte de Hainault, large rose; Etoile de Gunde, salmon centre, edged with white; Kinghornii, rose, with crimson eye, very fine. In Mr. Turner's lot at Kensington, Chameleon, white flaked with red; Flower of the Day, Leopold I., semi-double rose, shown in perfection by Messrs. Ivery at Kensington; Variegata superba and Harlequin, also from the last-named growers.

STOVE AND GREENHOUSE PLANTS.

—Among the amateurs, Mr. Whitebread was first and Mr. May second, both at Kensington and Regent's Park. In sixteen stove and greenhouse plants, Mr. Whitebread aimed at effect, and won by the size, symmetry, and even glow of bloom on his plants; there was nothing novel amongst them. A huge scarlet azalea, round as a globe, and about six feet over, placed at the extreme rear of the collection, close under the canvas, drew the eyes of the visitors to this quarter in such numbers that for hours together it was a dead lock. In

this collection *Vinca alba* was better bloomed than usual. It also included the best *Dipladena crassinodes*, *Erica depressa* exquisitely bloomed, an *Allamanda*, *Polygala Dalmasiana*—all good for size, richness of colour, and symmetry. Mr. May had the finest *Pimelia*; it was *Hendersonii*—one even convex surface of rich rose. *Gompholobium polymorphum* was also extra fine in this lot. In Messrs. Fraser's lot of twelve at Regent's Park, *Statice imbricatum*, loaded with grand spikes of dove-coloured blossoms, was greatly admired, and the more through being skilfully staged beside *Ixora Javanica floribunda*, the intense fiery orange of which brought out the curious blue tinge of the *Statice*. In the collection from Mr. Cutbush, of Barnet, we noticed a good *Dipladena* with six blossoms, and others opening, *Erica ventricosa* superb, covered with exquisitely-formed flesh-coloured blossoms; *Vinca alba*, good; *Rhyncospermum Jasminoides*, admirably done, and emitting a delicious fragrance; *Leschenaultia formosa*, rich and effective. In Mr. Rhodes's collection, which was in every way good, we noticed as extra fine *Erica ventricosa*, rich carmine-red; *Pimelia variabilis*, warm rose; both better than the average as examples of good management. The best *Dipladena* is *D. splendens*, the blossoms larger and more waxy in substance than *crassinoda*, and the foliage a richer shade of green. *Lepidodactylon Californicum*, very rarely seen at shows of late years, has been exhibited on several occasions this season; it is very effective.

PELARGONIUMS.—Amongst Mr. Turner's collections were Prince of Prussia, a charming white, with lake spot on the upper petals; Glow-worm (Foster), a dazzling mass of fiery crimson-scarlet; Candidate, Sir Colin Campbell, *Viola*, novel in colour, the top petals rich mulberry, lower petals bluish-lilac; Lucifer, fiery red, very effective, but rather long stalks; Bracelet (Turner), beautifully formed, but like many others as to colour;

Fairest of the Fair, Lord Clyde, Demon, Prince of Wales, Lady Canning, large, finely-shaped flowers, rich colouring. Prince of Wales in this lot was very attractive; colour, rich rose, dark top petals, and large white eye. Messrs. Dobson have shown in fine condition Miss Foster, dark top, crimson lower petals, flowers long stemmed; Leviathan, like the last, but purplish; Governor-General, still the best of its class, and most effective; Carlos, Monarch, Viola, quite novel in colouring, and a beautifully built flower; Roseleaf, small dark spots on a rich rose ground, very telling, and at a distance has the appearance of a mass of flame; Fair Ellen, Sanspareil, Bacchus, rich rosy crimson; Sir Colin Campbell, vivid cherry-crimson, deeper crimson top. Messrs. Fraser's best plants were, Festus, Lord Clyde, Pizarro, Excelsior, Sanspareil, Mazeppa, Etna (badly done), Carlos, Candidate, Gem of the West, Rose Celestial, Leviathan.

MISCELLANEOUS AND NOVELTIES.—One of the best contributions of miscellaneous subjects at Regent's Park was a collection of herbaceous calceolarias from Messrs. E. G. Henderson and Son, of St. John's Wood. They were of all colours, the trusses of huge size, and held up boldly on flower-stalks that looked stout enough to serve as candlesticks. If the observer could for a moment overlook their intensely rich and various colouring, their perfection of form was seen to be surprising. Truly there is a strain at last which eclipses all that has been seen before of this interesting section, which the rage for bedding plants had for a season thrown into the shade in the increased demand for shrubby varieties. For a grand show under glass or canvas there is nothing in the whole list of summer flowering plants to equal them. It would be idle to attempt to enumerate the most strikingly coloured flowers in this gay group; they ranged through all the shades of yellow, crimson, maroon, and red, to deep mulberry; and the deepest-coloured flower there was about the best for its fine form and noble trusses.

Messrs. Henderson sent also a nice lot of *Fuchsia meteor*: the plants were too small, and had evidently never been removed from under glass, so that, charming as they looked, they did not fairly represent the case. A plant of this variety which we have had out since the middle of May, is now eighteen inches high, and the foliage has at least three shades more of the curious red colour than it ever shows under glass. The new bedder, *Coleus Verschaffelti*, was to be seen in all sorts of places, and was everywhere good, many of the plants two feet high and two feet across—glorious masses of foliage colours. In Messrs. Henderson's collection was a charming new bedding pelargonium, called *Silver Star*, the blossoms a delicate flesh, and of a make and purity which will render this variety a favourite with all who are on the lookout for real quality, without reference to a mere blaze of vulgar colouring. Messrs. Veitch had several curious collections; one was a group of Ferns, in which we noticed pans of *Lomaria crenulata*, *Adiantum sulphureum*, *Lastrea opaca*, *Polystichium setosum* (a common-looking thing, not at all superior to our *Lastrea filix-mas*), *Adiantum chilense*, *A. scabrum*, etc. etc. Messrs. Henderson sent a bunch of flowers of *Clanthus Dampieri*, which they have always been expert growers of; these were very greatly admired, and were the subject of much inquiry and criticism. Mr. Bull sent a grand collection of novelties, amongst them the best specimens of *Coleus* in the show, also *Calamus Verschaffelti*, fine; *Musa vittata*, the leaves delicately brushed with faint bars of red and obscure cream colour, quite a gem; *Oreopanax dactylifolium*, with most elegantly palmated leaves, one of the most effective fine foliage plants; *Cyperus alternifolius* in its new variegation, the delicate leaves falling over like the ribs of an uncovered umbrella, an exquisitely beautiful stove plant, of a class which has not yet had proper encouragement. *Rhodesa macrophyllum fol. aureo marginatus*, a nice plant, with yellow-margined leaves, which nobody should buy till it is published under a shorter name, for

such e-e-elongation ought not to be encouraged. *Pavetta borbonica*, in Mr. Bull's lot, six feet high, was very effective. *Cibotium princeps*, a grand fern to grow with *Dicksonia* and others of a huge spreading habit.

SEEDLINGS.—Mr. Watson of St. Albans showed! at Regent's Park Tom Thumb *Calceolaria*, of the strain of *aurea floribunda*, but shorter and denser. The specimen plant measured about eighteen inches across, and was just ten inches high from the soil to the top of the spikes. It was one mass of yellow blossom, and if as good in the open ground as in a pot, will be the most useful bedding *calceolaria* yet produced. The same grower had a few shrubby dark varieties; one called Prince Arthur was good, but the dark kinds never have and never will be largely used in bedding compositions. Mr. Turner had in this section a splendid lot of pelargoniums, of which the following were particularly good:—Mrs. Marnock, rich rose, thin white margin, very cheerful and effective; Miss-in-her-teens, lower petals rosy-mottled, upper petals rich lake; Princess of Prussia, delicate flesh, finely formed, smooth, pure, quite a gem, and will be in great demand as soon as its merits become known; Queen of Whites, top petals rosy-purple, good, but not novel; Helen Beck, vivid carmine-rose, white eye, and white line round the margin, a lovely flower, possessed of every good quality; Butterfly, a rich dark flower; Mrs. Reynolds Hole, light, extra good form; Oriana, flesh, maroon top, grand in form and substance; Venus, richly spotted and attractive; Regina formosa, rosy-crimson; Cynosure, the most perfectly-formed pelargonium in the show, colours cerise and dark maroon, fine in every respect; Malbrook, salmon-rose, crimson-maroon top, fine form; Fidelia, quite a new style of colour, rose-purple, black top; Landseer, extra large, French spotted glowing crimson, the ground colour delicately feathered, another of the very best. There were some seedling horse-shoe varieties from Mr. Perry, of Castle Bromwich. The scarlets were no better than varieties already

well known, but a light flower in the style of Christine, of a clear flesh colour, appeared likely to take a leading place in the estimation of cultivators. We should like to meet with this again, and have much pleasure in recording that it was commended. The best seedling fuchsia was Smith's Universal, in the style of Sir Colin Campbell, but with more stuff, the double corolla being packed closely with substantial purple petals. Messrs. Paul and Son, of the old Cheshunt Nurseries, sent a seedling rose called Lord Clyde, a large flower, colour deep crimson, in the style of Eugene Appert, but larger and more dash in it; a thoroughly good flower, but not novel in colour.

FRUIT.—There has been nothing of special note contributed to the shows, though examples of good culture in pines, grapes, and melons have been plentiful.

Of Black Hamburg Grapes, the most perfectly ripened three bunches came from Mr. Henderson, gr. to Sir G. Beaumont, Bart. These were black as sloes, and beautifully covered with bloom. Larger bunches of Black Hamburg came from Mr. Hill, gr. to R. Sneyd, Esq., of Keele Hall; but they were somewhat deficient in colour. The same excellent grower also had three beautiful bunches of Black Prince, whose united weights were 9 lbs. From Mr. Allport, gr. at Doddington Hall, Nantwich, came some very fine West's St. Peter's. Beautiful bunches of Black Frontignan were contributed by Mr. Drewitt, gr. at The Denbies, near Dorking; and Mr. Standish of Bagshot showed good examples of Prolific Muscat. Of White Grapes, some good bunches of Muscats were exhibited; but they were for the most part unripe. The earliest among them is the Archerfield variety. A house of this shut up on the 14th Dec., was stated to be eatable in May, whilst one of ordinary Muscats shut up on the 1st of October, and otherwise treated in a similar way, has fruit only now fit to eat. Of Buckland Sweetwater fine bunches but unripe were shown by Mr. Hill, and we noticed some good specimens of Mus-

cadine, especially of the sort called Bailey's variety. Of Grizzly Frontignan, Mr. M. Henderson had some good fruit.

Strawberries were not numerous. Among the sorts were Oscar, Alice Maude, Victory of Bath, and a seedling from Mr. Turner, named President, of whose merits the judges expressed a favourable opinion. It resembles Trollope's Victoria, but it is earlier than that variety. The sample shown was stated to have gathered from the open ground.

EXHIBITIONS NEXT MONTH.—The Rose Show at Birmingham on the 1st and 2nd will, we have no doubt, prove most attractive, and an event for Birmingham, as all the leading growers of the Midland Counties

have made entries, and the committee have exerted themselves to the utmost to carry out the affair with spirit. Though we attended the Royal Horticultural Society's Rose Show on the 26th of June, before the number of the FLORAL WORLD was printed, the lateness of the date compels us to defer our report till next month, when we shall give the results of that and the Birmingham and Stamford Shows together. The other exhibitions during July are as follows:—2nd, third great Show at Kensington, and same date, Oxford; 3rd, Ipswich; 4th, Tunbridge Wells; 5th, Crystal Palace; 8th, Kington; 9th, Royal Botanic and Norwich; 10th, Lynn; 17th, Rose Show at Stamford; 17th, Woodbridge.

TWELVE FERNS,

INTRODUCED BY MESSRS. VEITCH AND SON FROM JAPAN, CHILI,
AND BORNEO.

ACROPHORUS AFFINIS (Moore).—large-growing elegant Davallioid stove fern from Borneo, whence it was sent by Mr. Thomas Lobb. It has a thick scaly rhizome creeping on the surface, and producing large finely divided fronds two to three feet long.

ADIANTUM CHILENSE (Kaulfuss). The Chilean Maiden Hair Fern.—Sent us from Chili, by Mr. Richard Pearce. It has polished ebony coloured stipites and rachides, and fronds a foot or more in length, triangular in outline, subtripinnate, with large smooth roundish trapeziform pinnules, simple and finely denticulate in the sterile parts, somewhat lobed and notched where fertile, the sori reniform, lying in the sinuses of the lobes. The smooth-looking glaucous green broad-pinnuled fronds have a very distinct and remarkable handsome appearance. It will be a hardy greenhouse kind.

ADIANTUM SCABRUM (Kaulfuss.) The Silver Maiden Hair Fern.—A delicately-coloured Silver Fern sent from Chili by Mr. R. Pearce. The plant is of dwarfish habit, with ob-

long fronds, having slender black stipites and rachides; they are bipinnately divided, with rather large roundish or somewhat trapeziform pinnules, denticulate at the margin, and sprinkled on both surfaces with farinose powder. A distinct and beautiful hardy greenhouse fern.

ADIANTUM SULPHUREUM (Kaulfuss). The Golden Maiden Hair Fern.—Introduced through Mr. Pearce from Chili. The fronds, which grow in thick tufts, are about a foot long, and have the slender ebony coloured stipites and rachides usual in the genus; they are triangular ovate in outline, tripinnately divided, the pinnules rather small, roundish, with the margins lobed, and elegantly toothed, each of the lobes being notched, with a reniform sorus in the sinus. In addition to these features, which render it worthy of universal cultivation for its beautiful form, the whole under surface is dashed over with a golden coloured powder, as in the gymnogrammas and other gold ferns. It is a free-growing hardy greenhouse species.

CHEILANTHES MYSURENSIS (Wallich).—A very elegant small-growing species of a favourite genus of ferns. Has been raised from spores collected in Nagasaki, Japan, by Mr. John G. Veitch. The plants form dwarf tufts, the fronds growing six or eight inches, or sometimes a foot in length, narrow lanceolate, bipinnate, the pinnules oblong, and crenated on the margin, where the fructification is produced. The fronds are very shortly stalked, the rachis and stipes being of a dark purplish brown, and clothed with scales; it is a very desirable greenhouse fern, and well suited for small fern cases.

LASTREA OPACA (Hooker).—A valuable introduction for the hardy fernery. It produces tufts of firm opaque fronds of a dark green colour, and very desirable; the outline is almost pentangular from the development of the basal posterior pinnules, and the pinnae and fronds are very gracefully acuminate; the fronds are bipinnately divided, the pinnules being narrow-oblong and more or less falcate and deeply lobed; the segments ovate, those on the hinder side of the lowest pinnae being very much larger than those on the anterior side. Introduced from Yokohama, Japan, by Mr. John G. Veitch.

LOMARIA CRENULATA (Moore).—A very neat-looking and perfectly hardy evergreen fern. Introduced by Mr. Pearce from Chili. The plant forms a close tuft about six inches high; the sterile fronds narrow lanceolate, almost pinnate, with small oblong acute crenulate divisions; the fertile fronds rather taller on reddish stalks, linear and crenulate. A desirable plant for the out-door fernery.

MICROLERPEA STRIGOSA (Presl).—An elegant free-growing fern of moderate size, introduced by Mr. J. G. Veitch from Nagasaki. It has bright green hairy fronds of about a couple of feet in height, ovate acuminate in form, bipinnate or tripinnate with roundish oblong or somewhat trapeziform pinnules, more or less lobed or toothed on the margin. It is of creeping habit. Its moderate size and lively colour will render it a most desirable hardy greenhouse fern.

POLYSTICHUM FLEXUM (Remy).—A fine coriaceous and perfectly hardy fern, sent from Chili by Mr. Pearce, which has stood out the last two winters entirely exposed, without suffering the least injury. The plant has a somewhat creeping rhizome, from which grow up to the height of about a couple of feet the firm-looking triangular fronds, which are tripinnate, with oblong toothed segments, and are remarkable for their thick leathery texture. It forms a fine bold fern for out-door rockeries.

POLYSTICHUM SETOSUM (Schott).—A common-looking hardy evergreen fern from Yokohama in Japan, introduced by Mr. J. G. Veitch. It is a tufted growing species of moderate size, with firm ovate-acuminate bipinnate fronds of two to three feet or more in height, the pinnules of which are trapezio-oblong acute, auricled, and sometimes slightly toothed, but most remarkable for bearing a fringe of setae or stiff hairs, which stand up from the plane of the frond, and give it a bristly appearance on the surface.

WOODSIA POLYSTICHOIDES, var. **VEITCHI** (Hooker).—A distinct dwarf fern, found in Yeddo by Mr. J. G. Veitch. The narrow almost linear fronds grow six or eight inches or more in height, and are pinnately divided, the pinnae being about an inch in length, linear oblong, and distinctly auricled with a row of sori near each margin, the whole surface above and beneath being covered with short close hairs. It will prove an interesting fern for hardy fern cases, being distinct from all other Woodsias in cultivation.

WOODWARDIA ORIENTALIS, (Swartz).—One of the finest of all hardy ferns. It has been raised in considerable abundance from spores gathered in Japan by Mr. J. G. Veitch. It forms a thick crown from which the rather large spreading triangular fronds proceed; these fronds are pinnate-pinnatifid, with lanceolate acute serrated segments one or two inches in length, the larger ones somewhat crenately lobed, and the whole frond bearing on the upper surface more or less profusely little bulbiform plants opposite the sori.

JULY, 1862.—31 DAYS.

PHASES OF THE MOON.—First Quarter, 4th, 10h. 51m. even.; Full, 10th, 1h. 38m. even.; Last Quarter, 18th, 5h. 13m. even.; New, 26th, 9h. 5m. even.

M D	Weather near London, 1861.		Rain.	THE COUNTRY.	
	BAROMETER. Mx. Min.	THERMOMETER. Mx. Mn. Me.		Rural Sights and Sounds.	
1	30.161...30.070	78...55...66.5	.05	Native ericas flower	
2	29.926...29.916	78...49...63.5	.00	The mountain thyme "purples the hassock	
3	29.836...29.799	79...44...61.5	.00	Titlarks [of the mole]"	
4	29.600...29.278	67...47...57.0	.12	Broom rape flowers	
5	29.278...29.275	71...46...58.5	.05	Eight species of Hypericum flower	
6	29.421...29.310	73...53...63.0	.26	Ferns show seed spores	
7	29.510...29.367	75...50...62.5	.04	Raspberry beetle	
8	29.711...29.636	75...45...60.0	.05	Clouds of gnats	
9	29.868...29.823	78...48...63.0	.02	Sweet marjoram flowers	
10	29.915...29.866	75...40...57.5	.01	Chicory flowers	
11	29.912...29.747	74...41...57.5	.00	Lappet and lobster moths	
12	29.664...29.555	81...57...69.0	.06	Hawk-moth appears	
13	29.521...29.435	81...55...68.0	.14	Water-beetles numerous	
14	29.605...29.514	78...53...65.5	.08	Meadow sweet flowers	
15	29.621...29.553	77...50...63.5	.02	Tamarisk flowers	
16	29.714...29.611	72...42...57.0	.00	Holy thistle flowers	
17	29.881...29.787	74...55...64.5	.00	Puss-moth appears	
18	29.750...29.650	73...52...62.5	.00	Brimstone-moth	
19	29.688...29.640	74...57...65.5	.02	Wild teasle flowers	
20	29.668...29.648	77...52...64.5	.10	Betony flowers	
21	29.749...29.682	73...52...62.5	.03	Flights of young wild ducks	
22	29.743...29.587	74...45...59.5	.04	Asphodel flowers	
23	29.737...29.539	71...54...62.5	.01	Vervain flowers	
24	29.823...29.666	69...56...62.5	.12	Yarrow flowers	
25	29.664...29.551	68...58...63.0	.13	Sea-holly flowers	
26	29.664...29.484	72...41...56.4	.29	Henbane flowers	
27	29.735...29.654	71...44...57.5	.20	Thorn apple flowers	
28	29.960...29.783	74...39...56.5	.01	Sea-fowl travel inland	
29	30.034...29.753	78...52...65.0	.01	Common Nightshade flower;	
30	29.850...29.773	77...45...61.0	.00	Bindweed flowers	
31	29.987...29.946	74...51...62.5	.04	The woods are silent	

NOTES FOR THE GARDEN.

KITCHEN GARDEN.—Plant the main crop of celery in well-manured trenches. Plant also, from seed-beds, cabbage of all kinds, broccoli, savoy, borecole, etc., in showery weather. Hoe between potatoes, give plenty of water to ridge cucumbers and marrows. Cut down artichokes, top runners, and keep them well staked.

Sow the last lot of runners, French beans, and peas for a late supply. Sow also cauliflowers, spinach, lettuce, turnip-radish, turnips, onions, cabbage, parsley, endive, and cucumbers for fruiting under glass till Christmas.

FRUIT GARDEN.—Strawberries struck in pots may now be shifted or turned out. Beds should be made now to bear abundantly next year. Bud stone-fruit trees;

thin out weak spray on bush fruits, and foreright shoots on wall fruits. Rub off useless shoots on vines. Thin all fruit of which fine berries are required. A powerful engine, frequently used among fruit trees, now will do them much good.

FLOWER GARDEN.—The last lot of pom-pone chrysanthemums should be struck under hand-glasses for the window and greenhouse. Train out and disbud dahlias, strike scarlet geraniums in the full sun, to be potted singly, as soon as rooted; plant chrysanthemums in the borders, and stake them at once. Layer pinks, carnations, picotees. Sow a few annuals to give bloom at the end of the season.

GREENHOUSE AND STOVE.—Pelargoniums newly cut down must be kept rather

dry till they break. Shift greenhouse plants required to bloom late, and stop to promote a bushy habit. Cinerarias should have good culture. Camellias may have small

shifts. Give plenty of liquid manure to vines swelling their fruit, and keep the bunches shaded with a few leaves, by tying the laterals over, where necessary.

TO CORRESPONDENTS.

FOUR QUERIES.—1. What is that insect which envelops itself in a sort of spittle, and what are his peculiar functions of mischief? 2. Would a handful of charcoal spread round the collar of the root prevent the tendency roses have to damp off during winter and spring? 3. Would a very weak solution of chloride of lime injure plants syringed with it? I have seen it recommended. The only apple tree I have, though full of well-set bloom, has had all prospect of fruit destroyed by "blight." 4. Will charcoal dust do as a substitute to mix with guano as a mulch for roses?—*W. D. Prim.* [1. Cuckoo-spit or frog-hopper, *Tettigonia spumaria*; the soft grub changes afterwards to a brown jumping beetle. 2. Probably it would. 3. We take the following from Dingler's *Polytechnisches Journal*; we have not yet tried chloride of lime, so as to be able to add our own testimony either for or against it:—"In scattering chloride of lime on a plank in a stable, all kinds of flies, but more especially biting flies, were quickly got rid of. Sprinkling beds of vegetables with even a weak solution of this salt effectually preserves them from the attacks of caterpillars, butterflies, morderella, slugs, etc. It has the same effect when sprinkled on the foliage of fruit trees. A paste of one part of powdered chloride of lime and one-half part of some fatty matter, placed in a narrow band round the trunk of the tree, prevents insects from creeping up it. It has even been noticed that rats and mice quit places in which a certain quantity of chloride of lime has been spread. This salt, dried and finely powdered, can, no doubt, be employed for the same purpose as flowers of sulphur, and be spread by the same means." 4. Charcoal dust will answer very well, but being destitute of potash it is not quite so good as wood ashes.]

SALVIA, VALLOTA, ETC.—Would you oblige me by informing me which is the best way of rearing salvia—by seed or cuttings? Seeds so often fail, though we get them from the best places. I have "Vallota purpurea," and tuberoses plants very healthy, but they don't blossom, and could I manage the Lilium

giganteum; we have two greenhouses, and one of them ripens grapes. Our "Pampas grass" never lost its green leaves this winter, which appears to me very singular, but our crops have been nearly ruined from constant rain.—*J. E., Tipperary.* [*Salvias* should always be grown from cuttings; it is a needless waste of time to raise them from seeds. Cuttings taken from the present time to the middle of September will make fine plants to flower next year. Tuberoses often fail because the bulbs are not good, in which case no culture will make them blossom. *Vallota* ought always to bloom, and we imagine the cause of failure is generally a poor treatment; they require a good soil, plenty of pot room, and abundance of water. *Lilium giganteum* is a hardy plant, and has been flowered out of doors finely in Devonshire. A cool greenhouse is the best place for it, and it is sure to bloom when it attains full age. At less than a guinea it is hardly possible to obtain plants that will bloom the first season, but they are sure to bloom in time if well cared for. The same treatment as for any other *Lilium* suits it. At Stoke Newington we have great trouble to keep the Pampas grass all winter out of doors; we keep up a succession of plants in pots to make good any vacancies that occur.]

FOWLS' DUNG.—*Amateur.*—Your *spargula* queries have been answered in the article which appears in another page. Fowls' dung is nearly as good as guano if properly managed. As swept up with the grit, it should be at once removed to a place under cover and spread out to dry. When dry, run it through a sieve so as to remove cabbage stumps, straw, and other rubbish; throw the rubbish into the muck pit and keep the dry flaky siftings to use as a top-dressing to potted roses and other plants that require strong manures. If required for open ground use dig it in as you obtain it among any kind of crops that need a stimulus—wherever, in fact, the soil needs enriching. If mixed with compost for potted plants, about a twentieth part of dry siftings will be enough. If drying it is too much trouble, mix it with dry sand

as soon as obtained, removing all straw and other litter, and keep the mixture under cover for use as required.

SCARCE VARIETIES OF APPLES.—When I required advice for choice of apple-trees to suit my soil, a kind friend named "Large Yellow Bough" and (I think) "Burr Knot." Neither of these can I get. One other plant I have sought for in vain—a tall standard of large-fruited medlar. It is only with a view to autumn planting that I inquire where these may be had. I want your advice. I have two Breda apricots in my ground, four years since removal; they blossom abundantly, grow vigorously, but bear nothing; the situation is rather exposed (high). Shall I cut them for a wall, or destroy them, or let them alone? Will any of your correspondents tell me, also, where to get an apple called, in the Royal Horticultural Society's Catalogue, "Betsy."—*Charles Ellis*, The Orchard, Upper East Sheen. [Large Yellow Bough is in Rivers's catalogue, Burr Knot is in Lane's catalogue. At almost any nursery the large-fruited medlar may be had. They are generally worked on the thorn for bushes, and the pear for standards. All the apricots require is warmth. You must use your own judgment about cutting them for a wall, we could not give an opinion without seeing them; but unless they have a hotter place they will never bear. You can see tiffany houses at Mr. Standish's nursery, Bagshot, at Messrs. Paul and Sons, Old Cheshunt Nurseries, Cheshunt, and at Messrs. Henderson's, Wellington Road, St. John's Wood.]

SHADY BORDER.—*Constant Reader.*—For silvery lines on a border infested with snails, there is nothing to equal *Antennaria margaritacea*, no snail, slug, or caterpillar, ever touches it. *Lobelias* of all kinds enjoy an almost complete immunity from the attacks of vermin; so for scarlet you can use *cardinalis*, and for front lines any of the small blue varieties, of which *speciosa* and *marmorata* are the best, and these do pretty well in the shade. The variegated mint is rarely touched by vermin, the same with the golden mint; but it must have sun to bring out the colour. *Calceolarias* will do in the shade, and are not much troubled by vermin. *Mimulus*, *Gaillardias*, *Heliotropes*, *Myosotis*, *Periwinkle*, and *Saxifrages*, will do well there. Pansies would not mind the shade, but the snails would eat them up unless you began a vigorous system of trapping, by putting heaps of brewers'

grains under flower-pots, where the snails and slugs would be found every morning. The little blue heartsease, of which we distributed seed this spring, would make a capital line of blue there, and snails never touch it. You must not expect a grand display of flowers on the border; it is more fit for a collection of *Saxifrages*, tufts of *Festuca glauca*, *Elymus glauca*, and other half alpine plants and grasses.

HYACINTHS OUT OF BLOOM.—*Miss Webb.*—At page 72 of the *FLORAL WORLD*, and in every one of the previous volumes, directions have been given for preserving the bulbs of hyacinths, so as to insure bloom the following season. Yours have done growing now, and you can do nothing but store them away till the end of September, and then plant them out in rich sandy soil, six inches deep; there let them grow, and in the spring cut away the bloom spike as soon as it can be removed without injuring the leaves. The next autumn you may have them potted for flowering.

VARIOUS INQUIRIES.—*K.*—When laps are putted it should be done outside, as there is then less likelihood of causing drip from the laps.—*Subscriber.*—The pelargoniums are in some way distressed, or they would not trouble you with so many yellow leaves; in the absence of information we must suppose them to be in an unsuitable compost; sound turfy loam, with a moderate amount of sand, is the best stuff to keep up the stamina of the plants and a healthy greenness of the leaves. The verbenas are infested with fly through having been starved too long in small pots. As soon as they take hold of the ground the fly will quit them: good growth is the best remedy; weak tobacco water applied with a soft brush, the best palliative.—*J. B.*—The following ferns will do for your tank, *Athyrium f.f.*, *Lastrea spinulosa*, *Adiantum capillus-veneris*, *Polypodium dryopteris* and *phegopteris*, and *Onoclea sensibilis*; under the drip, *Todea pellucida* would grow finely, so would any of the small filmy ferns planted on freestone and silver-sand.—*J. A. H.*—Your gloxinias appear to have had a chill when they were very moist; no doubt the cold east winds caught them at a moment when they were too tender to endure the shock. But there may be in the compost some rank material. Try a removal to a warmer house.—*T. B.*—No. 1. We cannot make out from a dried leaf.—No. 2. is *Piptanthus Nepiænsis*, not so common as it ought to be.

THE FLORAL WORLD

AND GARDEN GUIDE.

AUGUST, 1862.



UBSTITUTES FOR STONE are always in demand for the decoration of gardens, as well as for house-frontages and other purposes to which real stone is applied by those who can afford it. The difference of cost between the real thing and the imitation is enormous, and the difference increases with every augmentation of decorative detail. As raw material, good stone is cheap enough; it is the slow work of the sculptor's chisel that makes the wide distinction of cost between carving and

moulding. Substitutes for stone are moulded or cast while the material is in a plastic state, and the first design of a pattern, however costly, is spread over the thousands of works that may be produced in it, and each separate purchaser pays but a fraction of the first outlay on the artistic portion of the work. "Men sooner build stately than they come to garden finely," says Bacon; and they will never garden finely until real stone, or an imitation equal in goodness to the reality, can be had at a low price for the embellishment of the terrace, the fountain, the glacis, and the house itself to which these garden scenes are appendages. The manufacturers of artificial stone who have worked out designs in cements satisfactorily have aided much in advancing good taste in garden embellishments, and their products have given an air of grandeur and refinement to many a noble piece of ground for which the proprietor could never have incurred the outlay requisite to produce similar or even poorer effects in sculptured Caen, Bath, or Portland. So far as gratifying the eye and educating the mind to a true discernment of the beautiful, a well-finished cast of Apollo in common plaster is very nearly as effective as in Carrara marble. When we discover that it is but a cast we respect it less, just as we derive additional pleasure by admiring the texture and colour of the stone itself when inspecting an original work. Still, in a mere cast we may have the form truly rendered, the material can be improved in appearance by a skilful dressing of the surface, and the cheapest plaster is ennobled by

the publication of an idea, and is acceptable on that ground by those who must be content with imitations, or lack the graces of art altogether. When Loudon prepared his great works, the best achievements in garden sculpture and architectural embellishments were those of Austen and Seeley, of the New Road, who then, as now, got up cheap cements in such a satisfactory manner, that they won the praises and the profits they deserved, for placing first-class works of art within the reach of the humblest class of gardeners. But Austen and Seeley were outdone, left in the rear, when Mr. Ransome, of Ipswich, brought out his Patent Imperishable Siliceous Stone, a material frequently recommended in these pages, and one which none who purchased it ever regretted the possession. Compared with the Portland and other cements of Austen and Seeley, or with any and every other imitation of stone, Ransome's siliceous composition was seen to be remarkable for its crystalline beauty, its purity of colour, and its capability of resisting the disintegrating influences of our atmosphere. All other compositions of the class have a deadly look beside it. The materials are heavy, coarse, and subject to decay through the presence in the bulk of ingredients possessing various degrees of expansiveness and absorbability. On the other hand, the siliceous stone consists wholly of flint, and though an artificial production, and moulded to the intended design while in a moist and yielding condition, yet, when hardened, of a more durable and unchangeable character than any sandstone, better than some limestones, and possessing what no other imitation does—the beauty of the finest marble.

We have been led into these remarks through having recently made acquaintance with a new invention, which surpasses the patent siliceous stone in its applicability to the purposes of garden decoration. Mr. Ransome, of Ipswich, is the happy discoverer of a simple method of preparing a silicate of lime, a sort of flint marble, which is not only of an imperishable character, but actually improves with age, and hardens as it gets older, so that the atmospheric influences which destroy real stone will prove preservatives of this, and increase its value year after year. The new invention is to be known as Ransome's Patent Concrete Stone. It is formed of sand and chalk in the first instance; these, mixed with silicate of soda, are moulded to the required form, and then a solution of chloride of calcium is applied. The chlorine seizes on the soda of the silicate, and converts it into common salt; the silica of the silicate combines with the calcium, and instantly a hard stone or solid silicate of lime is formed, which resists the action of acids and alkalies, and retains faithfully the minutest details of ornamentation which were impressed upon it while in a plastic state.

We are not quite sure that this new material will supersede the patent siliceous stone in the beauty of its texture and colour. In that respect it appears that nothing more is to be desired. But it will supersede it in price, and henceforth artificial stone as hard as granite will be accessible at a little more than the cost of common cement and plaster. When we say that the siliceous stone required many weeks to dry, and many weeks to roast in the kiln, and that the concrete stone is dry from the moment of the final application of chloride of calcium, and requires no roasting at all, it will be understood first that it can be produced at a lower price, and second, that as it cannot suffer warping by fire, so it is likely to furnish faithful reproductions of the noblest sculptures and floriated deco-

rations for every architectural and horticultural purpose. We hope to see it applied, not only for façades, terraces, basins, and fountains, but for plinths of sun-dials, rustic garden-seats, ornamental edgings, flower-boxes, and even flower-pots, for some unexceptionable kind of ornamental pot is as much wanted as ever, and we have no hope of ever obtaining from the Potteries anything but the useful red ware with which we are so patiently content because of its cheapness and usefulness. As soon as we hear that samples of this stone are submitted to inspection, we shall take care to inform our readers. In the meantime, we advise those in want of garden decorations to look after the remaining stock of silicious stone, as this will be sold cheap now to make way for the new enterprise.

GARDEN BERBERRIES.

THE family of Berberries contribute a greater number of hardy evergreens for garden decoration than any of those in general use, with the exception of the holly. Yet, strange to say, there are very few collections of berberries to be found; their merits have yet to be made known, and the botanical system of planting must make more progress, before we can expect to see the members of natural families brought together for comparison of each side by side. As a collector of berberries, and in possession of all the useful species and varieties, I cannot but feel that this is a neglected family; for though one or two may be met with almost everywhere, the great bulk of the very best of the species are rarely to be seen, and there are not many even of the great nurseries that make any feature of them. This may, perhaps, be partly accounted for by the fact that the majority of the most beautiful species are of comparatively recent introduction. Mr. Fortune sent home several from China and Japan which have been largely propagated, and consequently but few specimen plants have yet been grown to furnish seeds for raising them cheaply. So the species sent from Japan by Mr. Veitch must have time to make their way; and there can be no doubt that the energies of Mr. Standish, Mr. Noble, the Messrs. Veitch, Messrs. Low, Paul, and Henderson, who have hitherto been almost the sole propagators of the most valuable kinds, will suffice in time to furnish stock of the best for all the well-furnished gardens of the country. The time is fast coming when gardens of any pretensions to beauty will be judged by their collections of berberries, for there is not any class of evergreen shrubs which afford so many points for interesting observation and comparison.

It matters very little whether we place the Berberries as the 7th order of Menispermaceæ, or adopt the later method of constituting them an independent order as Berberidaceæ. The botanical characteristics are distinct, and easily recognizable; and the family is one of the most natural, notwithstanding the attempted separation of a considerable number under the designation of Mahonia. The flowers of Berberis are mostly yellow, calyx three to six segments, which fall off early, petals (usually) equal in number with the sepals; each petal has two glands at its base inside; stamens equal in number with the petals, and *opposite to them*. The

anthers open from the bottom to the top by a small elastic valve, respecting which Don says, "This order differs from all those belonging to *Thalamiflora*, in the singular dehiscence of the anthers."—(Dychlamydeous Plants, I., 114.) The characters of *Mahonia* are petals without glands, and stamens furnished with a tooth on each side of the filaments—points by far too trivial for a division, and which furnish no definite rule, because *B. heterophylla* has petals with glands and toothed stamens, and *M. Nepalensis* has neither glands nor teeth. We may, therefore, in the face of such unsatisfactory distinctions, describe them all as *Berberis*, and have thereby the advantage of a simple nomenclature.

The type of the order is *Berberis vulgaris*, the common berberry, a hardy deciduous shrub, of which there are about a dozen varieties. Every ramblar in the country knows this useful tenant of the hedgerows by the agreeable odour of its yellow blossoms, and the grateful acid of its fruit. It would be a useful subject for culture in the fruit garden, as it will grow in any soil, and is quite at home on a poor sand or chalk where few other fruits would prosper. Anciently the fruit was held in high esteem in fevers of every class, and for making an acid jelly to eat with meats, and for use as a confection. The Egyptian doctors prescribed the berries macerated twenty-four hours in twelve times their quantity of water, and then mixed with a little fennel-seed, in fevers and bilious diarrhoea; and Dr. Woodville recommended them as the best of all acid fruits to allay thirst and heat in any fevered condition of the system. Where currants are plentiful, however, the berberry is of secondary importance; but on sand or chalk, where currants make a poor figure, the berberry should be grown as a useful substitute for preserving, pickling, and candying, and to make a good household wine. There are seven varieties cultivated; the best are the red, the black, the purple, the white, and the stoneless. The last is the best for preserving; the black is the sweetest, and the constitution of the shrub rather tender, so that it should never be selected for an ungenial climate. Doubts are often raised as to the genuineness of the plants supplied from nurseries of the stoneless berberry. The fact is, while the shrub is young the berries contain stones; when it gets old it ceases to produce them. The quality of the fruit, therefore, improves with the age of the tree. To grow any of these, all that is necessary is to plant them sufficiently far apart to allow of a free circulation of air amongst them; they require no pruning but such as may be necessary to keep the bushes open for convenience of gathering the fruit, because of the formidable spines with which the branches are clothed. There are two varieties of the common berberry worth adopting in shrubbery scenery, *B. vulgaris glauca*, which has an abundant foliage of a milky green hue, which makes a pretty contrast among shrubs of a deep green, and *B. v. foliis purpureis*, which has leaves of a bronzy purple colour. At Kew and Sydenham there are many fine examples of this berberry in the shrubberies, where it makes a striking appearance, and is quite a curiosity. I have it in a border of choice shrubs, and prize it highly for its curious colour and free habit of growth. Any of these may be propagated from cuttings, put in in autumn, in the same way as currant-shoots, or by layers put down in autumn. Other deciduous species, variously useful in planting shrubberies, are, *B. Iberica*, *B. Canadensis*, *B. sinensis*, *B. floribunda*, *B. cretica*, *B. cratægina*, *B. Caroliniana*, *B. conaria*, *B. Daurica*, a handsome species, *B. umbellata*. The copious list in Don's "Dychlamydeous Plants" in-

cludes many otherwise ranked as varieties, and is of course deficient of those recently introduced.

The berberries are widely distributed throughout Europe, Asia, and America. Australia has none; Africa probably has none; in India and China they are plentiful, covering vast tracts of mountainous ranges, generally as underwood, and usually preferring a temperate climate. Consequently they are for the most part hardy in this country, and well adapted for culture in peaty and sandy soils. A full list of the species and varieties would be a most interesting contribution to garden botany. It is much needed, for the purpose of assigning to their places the recent acquisitions, and to correct the errors which abound in the few lists at present extant. But to attempt it here would be too heavy a tax on the pages of this work, and I shall content myself with a few notes on the species which I have before me, taking them in alphabetical order, and calling them all *Berberis*.

AQUIFOLIUM is to be found in almost every garden, a free-growing evergreen, with ample foliage, a profuse branching habit; in spring the young leaves and the yellow flowers give it a lively appearance, and in autumn the leaves acquire various shades of bronze, purple, and red, which add to the richness of a well-kept plantation. This is one of the cheapest and most useful evergreens we possess, far superior to laurel where a long line or belt of shrubs is required as a screen, and it makes capital cover. When covered with ripe fruit, the appearance of this common shrub is beautiful, and as those berries make a good preserve and a brisk acid wine, it is a pity they should ever be allowed to fall and rot on the ground.

ASIATICUS.—A free-growing deciduous berberry, the branches armed with formidable spines. Like most of the deciduous kinds, the leaves are simple, obovate, and a pale green colour. It blooms freely, but does not readily ripen berries in this country. On a raised bank at Stoke Newington it makes immense growths every season; in the mixed border, where it is rather crowded with other shrubs, it is less robust. It evidently likes full sun and a free circulation of air. Though commonly used as a hedge plant, and one of the best for a live fence, because of its close growth and sharp spines, it is quite worth a place in every shrubbery, because of the cheerful tone of its foliage, and plentiful crop of yellow flowers in spring.

REALII.—This is one of the grandest of the race. It throws up stout woody stems, and can be grown as a standard if desired. The stout crowns throw out compound leaves of great size and beauty, the leaflets sessile, and consisting of three, four, or five pairs, and an odd one at the end, all of them somewhat angular and spinous. This likes the shade, and a rich, sandy, moist soil. To grow it as a bush, the points of the leaders should be taken out with a penknife in April, which will cause the dormant buds on the stem to break.

DARWINII.—An exquisitely beautiful berberis of slender growth, the long arching branches clothed with small-toothed leaves of a rich shining green, which glitter in the sun as if varnished; in the autumn the leaves change to a fiery orange, and the shrub is almost as beautiful then as in spring, when it produces clusters of reddish yellow or deep orange blossoms in great profusion. It is thoroughly hardy, the winter of 1860 did not harm a single one of my plants. For this species the soil should be rich

and sandy. I find it prefers a mixture of turfy loam, rotten dung and leaf-mould, equal parts. Wherever it is planted the soil should be well manured, and if the staple is heavy, sand or gritty leaf-mould should be added. It is first-rate cover, and pheasants like its fruit.

DULCIS.—Of slender growth, the foliage bluish green, and the amber yellow flowers produced in great abundance. This is a pretty shrub to mix with rhododendrons in a peat bed, where it will grow with great luxuriance. It is not particular as to soil; my plants are in a border of poor loam, and they grow and flower freely.

FASCICULARIS HYBRIDA.—A magnificent shrub, of similar habit to *Aquifolium*, but much more grand in its habit and colour. It is very dense in



BERBERIS JAMESONII.

growth, and soon makes a noble specimen of eight to twelve feet high. *Aquifolium* occasionally throws up long naked arms; this bundle-flowered berberis makes very short joints, and kills a few of its own shoots by the density of its successive growth. It will thrive in any ordinary good soil. With me it is growing superbly in clay, and in autumn it shows some splendid colouring. Last year I saw specimens in Mr. Meeson's garden, at Grays, ten feet high, and six or eight feet through, growing in a hungry red sand, apparently quite destitute of organic matter. It flowers freely at almost every joint.

FORTUNI.—I cannot make much of this out of doors, yet it is a beau-

tiful and nearly hardy shrub. Previous to 1860-61, I had twelve beautiful plants, the produce by propagation of one supplied some years before by Mr. Standish, who I think first introduced it, but that disastrous winter killed all but one, and that one is now a wretched apology for the species, and will have to be potted to make anything of it. This has compound leaves, the leaflets sessile, oblong-oval, distinctly toothed, mostly three pairs and an odd one. It is principally of importance as an ornamental shrub, on account of its peculiar tone of *pure green*, most of the greens in our gardens showing a predominance of either blue or yellow. In fact, the colour of the foliage is most beautiful. In habit its tendency is to make long upright rods which go bare at the bottom, and to grow handsome specimens it would be necessary to apply the



BERBERIS HOOKERII.

pruning knife with skill very frequently. I have never seen it in bloom, but I have always supposed it to belong to the section which produce their flowers singly. It will be found a useful and interesting shrub for the cool greenhouse and for sheltered borders.

GLUMACEA.—An elegant dwarf-growing species, with spinous compound leaves, which become tinged with red, orange, and brown at all seasons of the year, and are especially rich in autumn. It flowers freely, and is a valuable shrub for rockeries, and quite hardy.

INTERMEDIA.—Like BEALII, and rather more inclined to a racemose habit, otherwise equally grand in its proportions and colouring.

JAMESONII.—It is not certain whether this be a species or a variety. It was first noticed by M. Verschaffelt at an English nursery during one of his horticultural tours, and the account given of it was that it was

raised from seed received from Natal. It is a free-growing and most beautiful shrub, but rather tender. I had a fine plant of it on a raised bank, which the winter of 1860-61 killed outright. But that plant came originally from the open quarters of an English nursery, and it was reputed hardy. It is the best of all the berberies for pot culture in a cool greenhouse, and it might be plentifully propagated by grafting on *Berberis vulgaris*.

HOOKERII.—Among the small-leaved kinds this may compete with **DARWINII**. It has a very holly-like appearance, the leaves are dark, dull green, mostly in groups of three, sharply-toothed, and the plant a free-grower, and of slender habit. In the spring it is one mass of yellow flowers, and interesting at every period of its growth.

JAPONICA.—The noblest berberis yet introduced, and perhaps the finest evergreen shrub in cultivation. In habit it is naturally bushy and spreading, the compound leaves consist of six, eight, or ten leaflets, and an odd one; these are of huge size, a strong plant will produce leaves eighteen or twenty inches long, the separate leaflets as large as the palm of the hand. The leaflets are nearly square, with sharp spines at the corners, sessile and overlapping the stem and each other. The rich dark green of the foliage, and its distinct and striking forms render this shrub conspicuous in a collection for its distinct character and noble outlines; in autumn the deep green of the leaves changes to ruddy orange, and it holds the whole of its leaves during the severest winter. I have had the good fortune to have a large crop of fruit of Japonica this season; the bunches were not large, but the small bloom on the berries is much more heavy and beautiful than on an Orleans plum. If ever this shrub should become a common ornament of our gardens—as we hope it will—it will pay a good rent in berries, for they are juicy and sweet, and would make a good preserve. The berries are almost stoneless; I have just eaten twenty-two, and found but six seeds in them. Of course those seeds are sown, as will be all I can get from the crop of berries, hoping that every seed will make a plant.

TRIFURCA.—The foliage and general character of *Fascicularis hybrida*, but more inclined to form a tall tree of close columnar form. It is a superb species for shrubberies, and one of the best for a small collection. I saw a specimen of this about seven feet high in a fifteen inch pot at Messrs. E. and G. Henderson's not long since. I thought it one of the finest subjects for a conservatory.

NEPALENSIS.—Huge compound leaves of a pale yellowish green colour, consisting of five to nine pairs of leaflets, with an odd one. In habit and free growth this is one of the most valuable, but unfortunately it is not quite hardy. I had a magnificent pair, which stood on each side the walk at the head of my rosery, and the winter of 1860-61 killed them so completely, that in March their very roots were already rotting. For a great conservatory this is a superb evergreen shrub, which blooms more profusely and elegantly than any other berberis we possess.

It must not be supposed by any reader who happens not to be acquainted with this family, that they present any gorgeous appearance when in bloom. The large-leaved kinds make positively no show at all with their blossoms; *Dulcis*, *Darwinii*, *Jamesonii*, *Hookerii*, and *Nepalensis*, are, when in bloom, beautiful objects; as for the rest, one is generally glad when their blooms fall, and their beautiful berries begin to swell. The

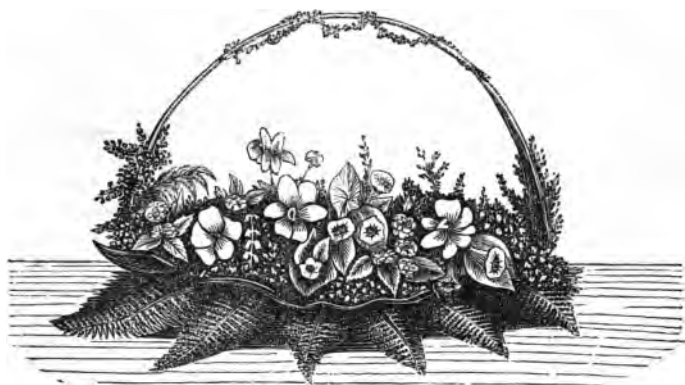
irritability of the stamens is not confined to *B. vulgaris*. All the species will throw their stamens forward to the pistils on pressing the flower at the base between the finger and the thumb. This is evidently a provision for securing fertilization, and it may rank with the fertilization of orchids as an example of the relationships of animal and vegetable life.

S. H.

DINNER-TABLE DECORATIONS.

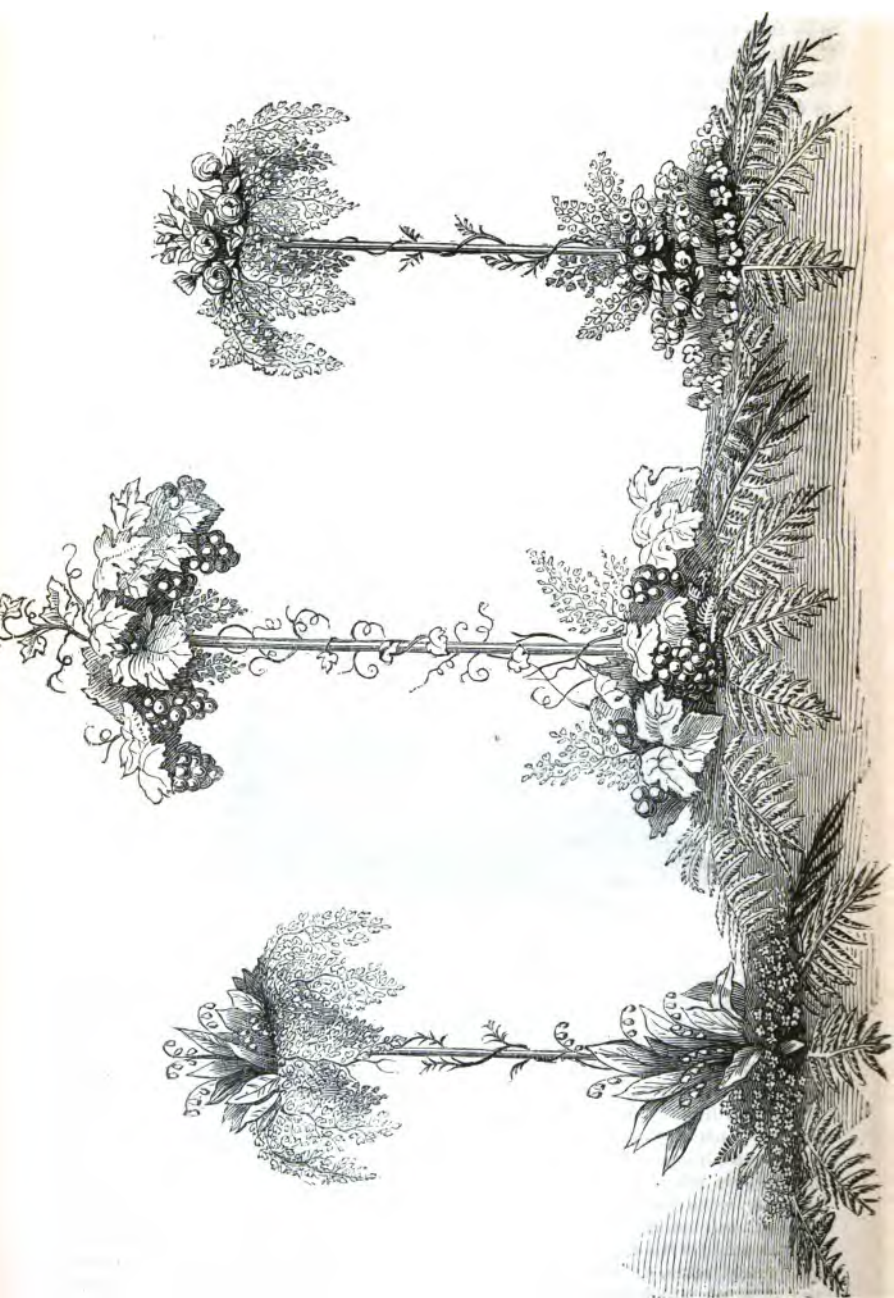
THE competitions for the floral decoration of the dinner table, instituted in 1861 by Sir W. Dilke, and this year by Lady Dorothy Neville, through the agency of the Horticultural Society, have brought to light one fact as to the applications of art in domestic life, and that is, that very few people know much about it. On each of the occasions when special exhibitions of these objects have been got

in idea; a few elegant outlines, and a few chaste harmonies of colour, being in every case preferred to huge bouquets, and expensive epergnes and vases. We figure here the two designs for which first prizes were given last year and this year; on each occasion the Misses March were the successful competitors. In 1861, the three tall-stemmed vases carried away the first prize. At the show in

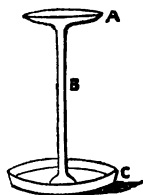


up, really good examples have been scarce, and, therefore, the more to be valued for their teachings and their use. It would be a folly to occupy space in describing the various combinations of glass, pottery, mosaic work, and flowers, severally exhibited in the conservatory at Kensington; but it may be as well to mention that the efforts that were farthest from success, were generally the most laboured and most complicated. The judges acted with sound discretion in awarding prizes, on each occasion, to the designs which were most simple

May last, the simple basket of white glass was successful. The nearest approach to elegance, without garish display, after the designs of the Misses March, was that of Mrs. Lermite, of Finchley, who exhibited a set of vases, elegantly gilt, and decorated with chain-work; the vases being filled with geraniums, roses, and lilies of the valley. The Misses March have trusted to graceful outlines, and quiet contrasts of colour. Last year the vases were furnished with bunches of grapes, vine leaves, lilies of the valley, and roses, and at the foot of each was



spread leaves of fern, grapes, and flowers. The mode in which these vases are made is shown in the diagram, where A is a glass dish, B a stem of clear glass, C a dish of japanned tin. To furnish these elegant contrivances ought not to be a difficult matter anywhere, as if the garden will not supply a few sprays



of convolvulus, Wistaria, or passion-flower, to twine round the stems, and a few ferns and flowers for the dishes, then the hedge-row flowers will do instead, and it may be an agreeable

pastime to seek new flowers for them every day, among the fields and coppices. The basket for which Lady Neville's first prize was awarded this year, was furnished with fern leaves, roses, lilies of the valley, and white narcissus. It had a chaste and finished appearance, and there was no question raised of its superiority. All the glass dishes and baskets exhibited by the Misses March with so much success, have been supplied by Messrs. Dobson and Pearce, of 19, St. James's Street, London, S.W., who have a stall in the International Exhibition, where similar contrivances are on view, always furnished with fresh flowers.

PROFITABLE GARDENING.

CHAPTER XXV.—CULTURE OF THE PLUM.

AMONGST the many fine varieties of plums cultivated in our gardens and orchards there is a great diversity of habit and constitution, so that in choosing varieties the nature of the soil and situation must be considered as of the first importance to their prosperity. Some varieties will thrive under the most generally unfavourable circumstances; others require shelter, warmth, and careful management, or it is impossible for them to produce good fruit. So, too, the nature of the stock may offer a variety for better or worse, according to its suitability. Purchasers of trees from nurseries do not usually inquire as to the stocks they are worked upon, and many disappointments occur to cultivators through this oversight; for varieties put on stocks not suited to their habit are likely sooner or later to be overpowered with suckers, or to expend their strength in the production of superabundant spray and breastwood, which no system of pruning can effectually keep in check. We must, therefore, offer a few observations on stocks, which will be useful to amateurs who practise budding and grafting, and serve to guard purchasers of

trees against the consequences of the careless system of working every kind on the same stock, which prevails in many nurseries.

Stocks.—The "Common Plum" is the stock most largely employed, as it suits the greatest number of varieties. It is of vigorous growth, and makes fine pyramids or standards. Planted in autumn, and cut down, this stock will throw up vigorous shoots, some of which will grow standard high the first year, and may be budded at that height with any of the weaker-growing varieties that have smooth shoots the second year. Those that do not run standard high the first season may be cut down the following spring, and grafted nine inches from the ground. We should always prefer those grafted near the ground to others either budded or grafted standard high, as the head takes the sap more completely, and there is less fear of the production of suckers. Suppose a lot grafted last spring to be now in a nursery row; we should now (August) nip out the leading shoot of all those that had made but a moderate growth, and those that had run up with strong tall leaders we should leave to form

standards. A vigorous growth at the first start is always to be encouraged in the culture of every kind of fruit tree, as securing for it a sound constitution; severe checks in the early stages of development cripple the tree and shorten its life.

The "Brussels" stock is much more vigorous than the "Commoner;" in fact, too vigorous for any except strong-growing orchard varieties, and it is by far too much used in the nurseries because it makes a good sized tree in a short space of time. It is quite unfit for dwarfs, though valuable for strong growers. This requires precisely the same management as the former, and on a good soil will throw up a shoot six feet high the first season, which may be worked the next year.

Plums that have downy shoots, such as Apricot, Belle de Septembre, Bleeker's Yellow Gage, Blue Perdrigon, Cheston, Coe's Late Red, Corse's Admiral, Damas Musqué, Damas de Provence, Damson, Diamond, Drop d'Or, Early Orleans, Early Prolific, Emerald Drop, Huling's Superb, Isabella, Lawrence Gage, Morocco, Orleans, Victoria, and a few others, will do better on the Brussels than on any other stock, unless the trees are required for pot-culture, in which case the "Quetsche" will take its place. Weak growers required to form neat bushes, either for open ground or orchard-house culture, should be worked on the *Mirabelle Petite*, a valuable variety, which produces small yellow fruit in clusters, excellent for preserving or cooking. Collectors of varieties should secure this plum, and raise stocks for use from the stones. It comes true, and is the most easily managed of any as a stock on account of its moderate growth. Another good stock is the Pershore Plum, which may be raised in any quantity from cuttings. It is a vigorous grower, and well adapted for standard espaliers and diffuse pyramids. On poor sandy or chalky soils, the Sloe is a valuable stock, but only moderate growers should be worked on it, as it is deficient of vigour, and has a dwarfing effect on the head it carries. It is a troublesome stock to work,

but worth all the trouble it occasions in districts unfavourable to the growth of the plum. To persuade it to take buds is almost impossible; grafts should be put on with extra care, and those that fail to take them should be inarched near the ground the following summer. Prune Damsons and White Bullace should be budded on the Muscle stock. As a rule, grafted are preferable to budded trees.

SOIL.—A sound loam, well drained, is required for all the highly-prized varieties. A dry, poor soil is very unfavourable to the plum, which likes plenty of moisture, and a sound, deep staple. If the soil inclines to clay, it will be more suitable than sand or chalk; and these last may be improved for the purpose by the admixture of clay and grass turf, previously rotted and pulverized by exposure to the weather. On a soil that will grow good wheat and cabbages, the plum will take care of itself, and in due time give abundance of fruit if the climate is sufficiently warm for the variety. On poor soils the trees should be assisted by an annual mulch over their roots of half rotten dung, spread during winter, and lightly pricked in some time in March, care being taken not to injure the surface-roots in so doing. Whenever a doubt exists as to the suitability of the soil, bushes and pyramids should be preferred to standards, because they can be lifted biennially, and their roots refreshed with a little fresh soil and manure, half a barrowful to each tree being sufficient to maintain them in full vigour if they are lifted in November and planted again directly, and the fresh soil to fill in round their outside roots.

PRUNING AND TRAINING.—In choosing standards, select those with clean, straight stems, and if the trees are very young, they ought still to have some short, twiggy shoots all along the stem nearly to the ground. Let these remain, but shorten them into one or two buds. Remove all top-shoots but three or four of the stoutest, placed at about equal distances, which will insure the formation of a regular head. These leaders

are to be shortened back to about four buds. The first year after planting, remove during the summer about a third of the side-shoots from the stem, beginning at the bottom, and cutting clean to the circumference of the stem. The next year remove another third part, and the next year make an end of them. By that time the head will take all the sap, and the stem will be swelling sufficiently not to need the assistance of side-shoots. For the rest, all that is necessary is to see that the head spreads regularly, and, if it does not, to compel it to do so by judicious pruning. Wherever branches are wanting, cut back the strongest shoot near the vacancy. This will throw out side-shoots to fill it up, and by this time the tree will have acquired a free habit, and will make a better head without further help than with it; and the only pruning thereafter necessary will be to remove occasionally a misplaced or over-gross shoot, or perhaps to cut back to fill up a vacancy caused by accident.

Espalier plums are troublesome, on account of the abundance of breast wood they produce. Unless carefully treated from the first, there will be little pleasure or profit in cultivating them. Take up a good leader for the centre of the tree, which should not be stopped. This will throw out side-shoots the next season, the best placed of which are to be nailed or tied in from the first, and the rest rubbed off while soft, to prevent as much as possible having to use the knife hereafter. Lay in the shoots nine inches apart, in the beginning of May pinch back every shoot not required to form a permanent portion of the training; but all leaders should be left to grow without stopping. The immense crowd of spray which young vigorous trees will make, is sometimes a perplexity to the cultivator, but there is but one way to deal with it, and that is to pinch back to the *second leaf* from the base, or even to one leaf, all that are in positions to form useful spurs; to rub out altogether shoots that break in positions where they will be too crowded to be useful; and to allow all leaders

to grow their full length without stopping. This pinching should be continued all the summer, till the end of July, after which, unless the weather is unusually hot and wet, the wood will begin to harden, and growth will cease.

Extra gross shoots that break in either good or bad positions may be stopped by nipping out their points in June, which will subdue their vigour, and in August, at the final tying-in, some of these may be found useful; those obviously not so may be cut clean away, the edge of the wood smoothed so as to be even with the surrounding bark, and it will heal over at once without gumming. Plums on walls are best fan trained, and the best wood of the season should be nailed in early, and kept nailed as it grows; intermediate shoots and breastwood to be cut back to within one bud of their base, which bud will probably produce a spur.

SELECT LIST OF PLUMS.

Twelve Bushes or Pyramids.

Belle de Septembre.—Fruit large, roundish oval, violet red. A first rate culinary and preserving plum, ripe middle of October.

Coe's Golden Drop.—Large, oval, yellow, a delicious dessert plum; ripe end of September.

American Damson or Frost Gage.—Round, purple, small, the best of all the damsons, and forms a fine pyramid; October.

Lawrence's Gage.—Larger than Greengage and as good; the foliage of this variety is large and glossy, and it is one of the handsomest for a pyramid on a lawn; early in September.

Mirabelle.—Oval, yellow, small and scarce, though it ought to be found in every nursery. It forms a beautiful bush; middle of August.

Mirabelle Tardive.—Small, roundish oval, yellow, a deliciously flavoured plum, and one of the best for pot culture, as when in bloom or covered with ripe fruit, it is a beautiful object. If the fruit is allowed to hang till shrivelled it is like a sweetmeat. This also makes a fine pyramid for a lawn.

Prince Englebert.—Very large, oval, purple, remarkable for its delicate blossom. A delicious clingstone, sweet, juicy and fresh, preserves well. Forms a diffuse pyramid fruit; ripe middle of September.

Reine Claude de Bavay.—Large, round, greenish yellow, delicious. Very hardy and a good bearer; middle of October.

St. Martin's Quetsche.—Medium size, ovate, pale yellow, covered with a white bloom; flesh yellowish, sweet, freestone; ripens late in October, requires a warm climate, or must be grown in the orchard-house.

De Montfort.—Round, medium size, purple, juicy, rich; middle of August.

Denniston's Superb.—Large, round, greenish yellow, juicy, and rich, a great bearer, very hardy; middle of August.

Early Prolific (Rivers).—Medium, oval, purple, juicy, freestone, a prodigious bearer, and so hardy that it rarely fails, even in exposed situations; end of July.

Purple Gage, or Reine Claude Violette.—Medium, round, purple, juicy, and rich, freestone. "Inclosed in muslin bags on the tree, and suffered to shrivel, the fruit becomes a perfect sweetmeat." Middle of September.

Twelve Espaliers.

Coe's Golden Drop.

Early Favourite (Rivers).—Medium, roundish oval, purple, juicy, freestone, one of the best early plums; ripe middle of July.

Fellenberg, or Quetsche d'Italie, perhaps, also, Semiana.—Medium, oval, purple; when slightly shrivelled it is sweet, rich, and perfumed; ripe middle of September; good for a west aspect.

July Greengage, or Reine Claude Hative.—Large, roundish oval, greenish yellow, freestone, rich and juicy; middle of July on a south wall, or east and west wall, end of July.

Blue Imperatrice.—Medium, oval, purple, rich, not juicy; October; will hang on the tree a month if no frost.

Greengage.—Round, green, "the

richest of all plums;" end of August.

Purple Gage.

De Montfort.

Ickworth Imperatrice.—Large, obovate, purple, tender, juicy, sugary, clingstone; October, and may hang till it shrivels.

Jefferson.—Large, oval, yellow, rich, delicious, great bearer; middle of September, and will thrive on a north wall.

Huling's Superb.—Very large, round, yellowish green, rich, juicy, freestone, an extra fine dessert plum. Habit of the tree vigorous and upright, leaves of great size. Middle of September.

Imperial de Milan.—Large, oval, purple, juicy and rich; middle of October.

Twelve for Orchard Standards.

Corse's Nota Bene.—Large, round, brownish purple, with a green tinge on the shaded side, and covered with a pale bloom; flesh firm, juicy, and rich; a fine dessert plum, ripe at the end of September.

Mitchelson's.—Large, oval, black, with fawn-coloured dots; flesh tender, juicy, and sweet, freestone. A good preserving plum; tree a prodigious bearer; this is largely grown for the London market.

Diamond.—Large, oval, purple, one of the finest culinary plums known, but unfit for the dessert, on account of its brisk acid. Middle of September; one of the best for the orchard.

Early Orleans.—Medium, round, purplish red, juicy and good; beginning of August.

Gisborne's.—Below medium size, amber with crimson and russet spots; flesh coarse, briskly acid; a fine cooking plum; ripe, middle of August; an early and prolific bearer.

Goliath.—Large, oblong, reddish purple, juicy, brisk, clingstone, a showy market culinary plum, almost good enough for dessert; end of August.

Prince of Wales.—Medium, round, red, a good kitchen plum, tree very prolific; beginning of September.

Victoria, or Alderton.—Large,

oval, red, sweet, and juicy, a first-rate kitchen plum; beginning of September.

Coe's Late Red.—Medium, round, purplish red, freestone, juicy, and agreeable; end of October; fine for the south of England, will not suit for a cold climate.

Pond's Seedling, or Fonthill.—

Extra large, oval, bright red, a fine kitchen plum; tree a great bearer; beginning of September.

Damson.

Orleans.

With the exception of Coe's Late Red, all in the list of standards will bear well on north, east, and west walls.

EXHIBITIONS OF THE PAST MONTH.

THE great shows of the month were the Exhibitions of Roses at Kensington, Crystal Palace, Birmingham, and Stamford, and the grand miscellaneous exhibitions of the Royal Horticultural and the Royal Botanic. As on former occasions, we shall enumerate the principal features at these gatherings in a way to furnish our readers with useful information without burdening our pages with heavy reports. We must of necessity begin with Roses; they were the chief attractions wherever they were shown, as they always will be. The character of the rose would suffice for its popularity, but in addition, it is a flower which has a place in every garden, which cannot be said of orchids and other stove-plants, beautiful, curious, and odorous as many of these are:—

NEW ROSES.—There were several beautiful collections of these at Kensington, and the order of success among exhibitors stood thus:—1st, Messrs. Paul and Son, Old Cheshunt Nurseries; 2nd, Mr. Cant, of Colchester; 3rd, Mr. Cranston, of Hereford; 4th, Messrs. Fraser, of Lea Bridge Road. The most striking rose in Messrs. Paul and Son's stand was Lord Clyde, a richly-coloured rose of great size and rather loose centre; petals substantial; colour, a rich maroon purple, with a shifting glow of crimson; altogether a grand rose of its class, and certain to become a favourite. Beside this was an unnamed seedling of the make and carriage of Alphonse Karr, but with two shades more of fleshy red, and which will probably be described as cherry colour. It has more stuff in it than Alphonse Karr, and is undoubtedly a

first-class rose of medium size. Maurice Bernardin was shown in nearly all the collections of new roses, and in Messrs. Paul's was in beautiful condition. It is described in the catalogues as vermillion; the colour is rather purplish crimson; the petals imbricated, full, and the flower one of the grandest roses yet brought out. Paul Feval, a seedling from the General, colour of the old China rose, very large, full, and well-formed, said to be more vigorous than the parent. Catherine Guillot (B.) purplish rose, good, but no particular merit to distinguish it from others of the same class as a cut-flower; as a vigorous grower and free bloomer it will probably become a favourite. General Washington, without a parallel for colour and form, and ought to be in every collection; the outline is a perfect circle, the petals stout, regular, and smooth, the colour purplish-red, with a glow of carmine-red towards the centre; a sort of shot-silk rose when quite fresh, and still good when half faded. Damask Columella, another exquisitely-formed rose, close and compact, the petals shell-like, and the colour bright rose, changing to rosy pink; all the cheerfulness of the old China, with the highest qualities of a show Damask. Charles Lefebvre, bright red, purple centre, will probably prove a useful rose, but we must see it again before giving any decisive opinion upon it. Comtesse de Segnien, velvety-red, shaded with violet, loose in build, open centre. Gloire de Chatillon, violet-red, shaded; this, and a few others of the same class, including Reine des Violettes, are decidedly inferior. Though so many

purple and violet roses have been sent out during the past five years, we cannot call to mind a single variety really good, nor was there a good purple to be found in this show. In other collections we noticed as good, *Madame Pierson*, bright red, silvery edges, most beautiful form and substance. *Wilhelm Pfitzer*, glowing red, well-formed. *Madame Julie Daran*, vermillion, glossy; an acquisition for colour; form globular. *Madame Furtado*, rosy-carmine, fine form; a very showy rose, and one of the best of recent introductions. *Alexandre Fontaine*, cherry-red, shaded with white; a chaste and pleasing flower.

The magnificent blooms of the new *Celine Forestier*, *Senateur Vaisse*, *Victor Verdier*, *Eugene Appert*, *Beauty of Waltham*, *Reynolds Hole* (a true bedding rose, rich in colour, and a fine compact flower), *Madame Boll*, *Marquis Foucault* (salmon, thin, well-shaped, and though far from perfect, indispensable for its colour and free habit), prove that the rose is advancing both as a florists' flower, and as one of the noblest subjects for garden decoration. Still newer than any of the foregoing are the following:—*John Hopper*, shown last year, and then regarded as a very promising rose, colour rosy-purple, brightening into carmine-crimson at the centre; *Model of Perfection*, beautifully-formed, colour rose-pink, cheerful, and of good carriage; *Madame Standish*, this rose has been before the public three seasons, and may now be regarded as one of the very best. If the flowers now exhibited differ from the first blooms we saw, it is that they are better, and it is the best of the class, of which we yet require a few, clear peach, to light up the general mass of reds and crimsons, which have been so largely multiplied of late years; *Louise Darzins* is more than good, a real advance in whites, of which the best has been *Dr. Henon*; this surpasses the older variety in its fine form; it is not large, but well built and really good.

THE GREAT COLLECTIONS.—The principal varieties in the great collections were:—*Amabilis*, *Amandine*, *Anna Alexieff*, *Alex. Bachmeteff*,

Alex. Fontaine, *August Mouchelet*, *Auguste Vacher*, *Agatoide*, *Archduc Charles* (this is not good enough for show), *Archimides*, *Alphonse Karr*, *Anna Diesbach*, *Arthur de Sansal*, *Adelaide Bongère*, *Baronne Prevost*, *Baronne Wassenaer* (moss), *Boquet de Flore*, *Baronne Hardy*, *Baronne Hallez*, *Blanchfleur*, *Blairii No. 2*, *Beauty of Waltham*, *Buffon*, *Brilliant* (Paul's), *Comtesse de Chabillant*, *Caroline de Sansal*, *Comtesse d'Orleans*, *Charles Lawson*, *Comtesse Oubaroff*, *Compte de Cavour*, *Compte de Paris*, *Crested Moss*, *Catherine Giulot*, *Colonel Cambriels*, *Clement Marrot*, *Comte de Nauteuil*, *Charles Lefevre*, *Colonel Rougemont* (shown very large, and in some instances inclining to coarseness), *Coup d'Hébé*, *Common Moss*, *Crimson Moss*, *Charles Duval*, *Chénédolé*, *Compte de Faloux*, *Celine Forestier* (yellow, quite *Noisette* in character and well adapted for climates unfavourable to *Teas*), *Delamotte*, *Duchess of Norfolk*, *Duc d'Ossuna*, *Duc de Magenta*, *Duc Decazes*, *Docteur Bretonneau*, *Devoniensis*, *D'Aguesseau*, *Empress Eugénie*, *Eugene Appert*, *Evêque de Nîmes*, *Francois I.*, *Gloire de Dijon*, *Geant des Batailles*, *Grandissima*, *Gustave Coraux*, *Gloire de Santhenay* (as the first to pronounce this a grand acquisition to the rosery, we may now direct attention to the position it has acquired, in proof of our judgment when there was none but ourselves to praise it), *Gloire de Bourdeaux*, *Gloire de Vitry*, *General Jacqueminot*, *H.P.* (this favourite of ours is likely to be quite eclipsed in quality by roses of equal substance of petal, and as brilliant in colour, the *H. C.* of the same name is hardly worth growing), *General Castellane*, *Gloire de Couline*, *Goubault*, *Homère*, *Jacques Lafitte*, *Jeannie Deans*, *John Waterer*, *Julie Mausais*, *Jules Margottin*, *Kean*, *Lion des Combats*, *La Reine*, *Lord Palmerston*, *Lord Raglan*, *Louis XIV.*, *Louise Odier*, *La Ville de St. Denis*, *Louise d'Arins*, *Louise de Savoie*, *Lady Georgina Miller*, *La Brilliant*, *Louise Magnan*, *Letitia*, *Louis Philippe*, *Lamarque*, *Louise Chaix*, *Louis Bonaparte*, *Lælia*, *Lord Clyde*, *Leonice Moise*, *Madame Vidot*, *Madame Cam-*

bacérés, Madame Boll, Madame Dommage, Madame Knorr (this in every stand, was exquisite in form, and one of the grandest cupped roses), Madame Rivers, Madame Hector Jacquin, Madame Breon, Madame de Lamoricière, Madame Van Houtte, Madame Vigneron, Madame Furtado, Madame Schmidt, Madame Hardy, Madame Zoetmans, Madame la Comtesse, Madame Plantier, Madame Damaizin, Madame Vidot, Madame Masson, Madame Bravy, Madame C. Caprelet, Madame Pauline Villot, Madame Bonnaire, Mathurin Regnier, Mlle. Alice Leroy, Monsieur Joigneaux, Marquis de Foucault, Model of Perfection, Madame le Gras, Monsieur Montigny, Narcisse, Ohl, Omar Pasha, Oriflamme de St. Louis, Orderic Vital, Ornement de Jardins, Paul Dupuy, Parmentier, Prairie de Terre Noir, Paul Perras, Princesse Clotilde, Princesse Mathilde, Princess Royal (moss), President (new Tea), Prince Leon, Pauline Lanzeuwer, Paul Ricaut, Pœonia, Pius IX., Royal Epoux, Robert de Brée, Reine des Violettes, Sénateur Vaisse, Souvenir d'un Ami, Souvenir de Malmaison, Souvenir du Comte Cavour, Sombreuil, Sauchette, Souvenir d'Elise, Souvenir de Leveson Gower, Souvenir de la Reine d'Angleterre, Sophie de Marably, Sir J. Paxton, Safranot, Triomphe de l'Exposition, Triomphe des Beaux Arts, Triomphe de Paris, Triomphe d'Alençon, Triomphe de Rennes, Triomphe d'Amiens, Victor Verdier, Vicomtesse Decazes, William Griffiths.

AMATEUR COLLECTIONS.—Mr. Hedge, of Colchester, made a magnificent figure among the amateurs. He sent the best 48, the best 24, the best 18, and the best 12, and the best 12 again in the open class. The Rev. Canon Fisher, Rev. H. Helyar, Rev. W. Childs, and Messrs. Coop, Ingle, Moffatt, Stratten, Morris, and Worthington, were the winners in the amateur classes. Mr. Laxton, of Stamford, sent a collection of charming flowers, which might have had an extra prize with propriety. Altogether the amateurs showed the best flowers, as they ought to do: but Mr. Hedge went before Messrs. Francis,

Keynes, and Fraser in the open class for 12 trusses of any kind; no small encouragement this to private growers of roses, who have now the whole field open to them, whether they exhibit or not, to eclipse the trade in the production of the most perfect flowers. We subjoin the names of the varieties in Mr. Hedge's 48; they were Comtesse Cecile de Chabillant, Madame Vidot, Lord Raglan, Mathurin Regnier, Washington, Pauline Lanzeuwer, Queen Victoria, William Griffith, Gloire de Dijon, General Simpson, Baronne Prevost, Princess Helena, Virginal, Souvenir de la Reine d'Angleterre, Clara Sylvain, Charles Lawson, Aurora, La Ville de St. Denis, Lamarque, Anna Diesbach, Reine Victoria, Madame Masson, Madame Cambacérés, Mrs. Rivers, Eugène Appert, Louise Magnan, Sénateur Vaisse, Coupe d'Hébé, La Fontaine, Caroline de Sansal, General Jacqueminot, Adam, Bizarre, Marbrée, La Reine, Letitia, Juno, Prince Regent, Pius IX., Orderic Vital, Jules Margottin, Madame Bravy, Madame Boll, Devoniensis, and Smith's Yellow. A second exhibition of 48 sorts from Mr. Corp, of Salisbury, contained Celine Forestier, Triomphe de Lyons, Madame Knorr, La Reine, Gloire de Dijon, Paul Ricaut, Evêque de Nîmes, Comtesse Cecile de Chabillant, Madame Boll, Louise Peyronny, General Jacqueminot, Madame Vidot, Sénateur Vaisse.

CHOICE OLD VARIETIES.—Among the best collections in the conservatory was a fine lot of three trusses each, heaped together most confusedly, and very beautiful as a bed of roses, but without order of arrangement, and wholly without tallies, from Mr. Hollamby. Among them were some beautiful Teas and Bourbons, and they were all good. Mr. Francis had a charming box of Baronne Prevost, one of the most telling varieties, on account of its size and lively colour. Mr. J. Hollingsworth, of Maidstone, had a set of Teas, comprising Devoniensis, Madame Falcot, Bougère, Gloire de Dijon, pale and poor, Niphotos, Eugene Desgaches, Enfant de Lyons, Elize Sauvage, Souvenir d'un Ami, Madame

Sylvestre, Miranda. The two most useful hybrid perpetuals of the last few years are undoubtedly *Senateur Vaisse* and *Victor Verdier*, and we should have been glad if they both had been made the subject of special competition. The first of the two was selected for a place in the schedule, and Mr. Keynes, of Salisbury, took first prize. Comparing the first variety with the best examples of *General Jacqueminot* in the show, *Senateur Vaisse* is certainly an advance on that famous variety, and will no doubt supersede it as one of the best roses for beds of one kind. Other boxes of one variety were 12 *Charles Lawson*, from Mr. Hedge, of Colchester, who was first in this class. Mr. Keynes sent 12 *Anna de Diesbach*, not very good-looking; 12 *Comtesse de Chabillant*, a shade worse. Messrs. Fraser had 12 of the last-named variety in still worse plight, the edges of the petals having a bleached appearance. The box of 12 *Gloire de Vitry*, from Mr. J. Shackell, of Bath, were very good.

STOVE AND GREENHOUSE PLANTS.

—At the Royal Botanic, Mr. Whitebread, gardener to H. Colyer, Esq., Dartford, and Mr. May, gardener to J. Spode, Esq., of Rugeley, were the leading exhibitors in this class. The first had the large gold medal for as fine a set of sixteen plants as were ever staged. Amongst them were the following:—*Erica depressa*, round as a ball, in even bloom all over, and the foliage fresh and bright down to the pot; *Pimelia grandiflora*; *Phænocoma prolifera*, an elegant *Aphelexis*-like shrub, with silvery stems and rosy flowers; *Vinca alba* and *V. rosea*, extra large, and masses of bloom; *Kalosanthus coccinea*, a grand specimen, like a pyramid of fire; *Gompholobium splendens*, one of the pea-flowering family on which we made note recently; *Pleroma elegans*, a fine contrast to *Allamandas* and *Pimelias*. Mr. May had an extra gold medal for a showy set of plants. The most noticeable in these were *Polygala cordifolia*, *Erica Parmentieriana*, a superb plant, and quite worth showing as a single specimen, for it was dense in colour—a peculiar shade of

crimson as if washed with a slight salmon tint—as a first-class azalea; behind it stood a salmon-red azalea in perfect condition, and the proximity of the two was not favourable to a judgment of either; *Erica Shannoniana*, white, with brown calyx; *Azalea coronata*, rosy-purple; *Aphelexis macrantha*; *Leschenaultia formosa*, rich in bloom and foliage; a *Statice* like *Holfordii*, but not tallied; *Mirbelia Meisneri*, not correctly tallied, another of the Fabaceous gems not often exhibited, and a charming conservatory plant. Mr. Chilman, gardener to Mrs. Smith, Epsom, had a gold medal for a pretty set of six, consisting of a *Dipladenia*, not quite out; *Kalosanthus coccinea*, *Dracophyllum gracile*, an *Ixora*, and a *Franciscea*, the last a beauty. Mr. Kaile, gardener to Earl Lovelace, sent *Azalea crispiflora*, extra good; *Ixora rosea*, a charming plant, heavily laden with flesh-coloured blossoms; *Vinca rosea alba*, an *Allamanda*, and *Kalosanthus superba*. Mr. Baxendine, gardener to W. H. Smallpiece, Esq., Guildford, had *Aphelexis humilis rosea*, one of the best specimens of *Aphelexis* in the show, and a fine variety, colour pale rose; *Leschenaultia formosa*, also worthy of high praise; *Tetralathea Verschaffeltii*, a plant not often seen, but unique in its graceful habit and modest beauty; *Aphelexis macrantha purpurea*. Mr. Tegg, gardener to Baron Hambro, had in his pretty collection a *Medinilla*, a splendid plant of *Phænocoma prolifera Barnesii*, and *Erica ventricosa Bothwelliana*, superbly bloomed. The six from Mr. Wheeler, gardener to J. Philpott, Esq., Stamford Hill, were not equally good throughout: *Aphelexis purpurea*, fine; *Dracophyllum gracile*, middling; *Erica ventricosa Bothwelliana*, good; an *Allamanda*, bad; a *Statice*, not out. A fine collection of ten plants from Mr. Green, gardener to Sir E. Antrobus, comprised *Erica depressa*, *Pleroma elegans*, a *Kalosanthus*; these were the three best, and it would be no easy matter to beat them; *Aphelexis humilis*, an *Allamanda*, *Erica obata* (so spelt), *Hederoma tulipiferum*. Mr. Page, gardener to W. Leaf, Esq.,

Streatham, had a fine *Dracophyllum gracile*, quite out, and a mass of white flowers; *Erica miniata splendens*, which should have been labelled *Eparis miniata splendens*, not in good bloom; an *Allamanda*, and an *Ixora*. The nursery collections were all showy plants. Mr. Cutbush, of Barnet, had a grand collection, comprising *Rethania squarrosa*, a showy composite with yellow flowers; *Pimelia mirabilis*; *Dipladenia crassinodes*, with plenty of large rosy flowers; *Statice imbricata*, not full out; *Vinca rosea*, *Dracophyllum gracile*, *Kalosanthes Beauty of Charonne*, a very strikingly coloured variety of a cerise shade of crimson, and apparently a real improvement on *coccinea*; *Erica ventricosa superba*. Messrs. Fraser had medium gold medal for a collection in which was the best *Medinilla magnifica*, the bracts and flowers intensely coloured cerise-red, deepening into crimson; a splendid *Kalosanthes*, called Mr. Truphemus, scarlet-crimson, and a credit to the establishment; *Ixora Javanica floribunda*, extra good; the rest similar kinds to those in other collections. Mr. Rhodes, formerly gardener to Mr. Philpott, now takes his place among the nurserymen, dating from Sydenham Park, had specimens quite after the old sort—*Sollya linearis*, nicely covered with small blue blossoms, a *Tetratheca*, *Roella ciliata*, *Clerodendron Kempferi*, very fine.

PELARGONIUMS.—The season of 1862 will be as memorable hereafter for its additions to the lists of pelargoniums as for the number of splendid roses it has already added to our collections. The pelargoniums at the Royal Botanic on the 9th were a shade better than at the Horticultural on the 2nd, when we thought them equal in general character to anything ever before shown, and as to the merits of new varieties, far beyond an exhibition of the past five or six years. Mr. C. Turner, of Slough, and Mr. Bailey, gardener to T. Drake, Esq., Shardeloes, were placed equal: the first had gold medal for twelve, the second gold medal for ten magnificent plants. The large silver-gilt medal was awarded to Messrs. Dobson, of

Isleworth, for twelve; to Mr. Wiggins, gardener to W. Beck, Esq., for ten; Messrs. Dobson for six, large varieties; and to Mr. Duke, gardener to T. Tuckworth, Esq., Finchley, for six scarlets; Messrs. Fraser had the silver-gilt medal for twelve; Mr. Lamb, gardener to Captain Cahill, Southall, the same for six fancies; Mr. Windsor the same for six scarlets. Other winners in this class were Mr. Windsor, gardener to A. Crawley, Esq., Highgate; Mr. Lamb, gardener to Miss Thackerwaite, Southall; and Mr. James, gardener to W. F. Watson, Esq., Isleworth. Among the collections the most attractive varieties were Lady Canning, Fairest of the Fair, Lord Clyde, Viola, Leviathan, Desdemona, Etna, Rose Celestial, Candidate, Mrs. Foster, Carlos, Flora, Glowworm, Rosa Bonheur, Bianca, Duke of Cambridge, Eclipse, Prince of Prussia. Fancies included Modestum, Evening Star, Crimson Pet, Delicatum, Cloth of Silver, a delicate flower, and a lovely contrast in a set of high colours; Celestial, Beadman, Claudianum. Spotted kinds included Mr. Marnock, Conspicuum, Macbeth, Osiris, Sanspareil, Diophantus, Madame Furtado, Mr. Hoyle, Distinction, Bracelet, Guillaume Severyns.

NEW PELARGONIUMS.—*Feu de Joie*, from Mr. Turner, fine form, fiery colour, top petals maroon; *Peep o' Day*, from Mr. Beck, cerise, dark top, perfect in outline, moderate size; *Scopus*, very much like the last, and evidently from the same seed-pan; it ought to be cancelled, and we advise Mr. Wiggins not to show both again; *Rosamund*, light rose and dark top; *Eurydice*, from Mr. Beck, pearly-white, lower petals deep blood coloured, upper petals with clean white margin; *Queen of Whites* (Dobson), a noble flower, the white pure, and the markings rich and striking.

FUCHSIAS.—These were mostly in good condition, though, generally speaking, fuchsias have not bloomed nicely this season. The best collection at Regent's Park, came from Mr. Cannell, gardener to G. Jennings, Esq., Clapham, and was awarded the

large silver-gilt medal. The varieties were—Marie Corneillion, white corolla, equal to Acme, and the sepals a richer shade of red; Little Bo Peep, not yet beaten in the class of dark flowers; Guiding Star, Sir Colin Campbell, Wiltshire Lass, Prince Alfred. Mr. Cross, gardener to Sir H. Goldsmid, Bart., had a silver medal for Princess of Prussia, Rose of Castile, Prince of Orange, Fair Oriana, British Sailor, and another like Clio, but not labelled.

NEW FUCHSIAS.—Mr. Smith, of Hornsey Road, had a showy fuchsia called Universal. It resembles Epps's Wonderful in colour, but is more substantial, and the double corolla has a crinoline outline. We did not think it likely to become a universal favourite. Sanspareil, from the same grower, is a fuchsia of great promise; it has a coral-red calyx, and snow-white corolla, like Marie Corneillion, but the corolla is longer than that of the last-named variety. Princess Helena, also from the same grower, will we believe prove to be the best white corollaed fuchsia yet produced; the proportions of the flower are admirable, and the colours clear and vivid. Mr. G. Wyness, of Buckingham Palace, had the queerest seedling fuchsia ever seen by mortal eyes. Imagine Rose of Castile with the best of its colour washed out, and the plant electrified, so as to put the flowers in a fright, and you may come something near to understand that it was appropriately called Novelty.

PETUNIAS.—Hitherto petunias have made but a poor figure at exhibitions this season, and fortunately, considering the miserable weather we have had, they have been but little used as bedders anywhere. Mr. Bull made amends for the short-comings of exhibitors generally, by sending a charming lot of new varieties, the most attractive of which were the following:—Nonsuch, a large floppy flower in the style of Magnum Bonum, and a richer colour. Special, exquisitely formed, and firm as parchment, ground colour warm rose, regularly veined with lines of deep rosy-purple. Excellent, like the last, and one of the two should be cancelled.

Captivation, snow-white, with broad stripes of rosy-purple or mauve, the stripes forming an almost regular cross, most beautiful and very novel. This throws Madame Ferguson into the shade, and we have no doubt will quite supersede it for quality in all points. The plant of Madame Ferguson in the conservatory at Kensington produces now but a few flowers true to the colouring of the print published in the "Florist," and we quite expect it will run away from its original character in a year or two. Bull's Captivation has an air of permanency about it, and will be a favourite. Acme, white ground, purple veins, quite second-rate. Guido, rosy-purple, veined with deep rich purple lines, white margin, a gem. Venus, described in our report of the Kensington Show of June 11th, rose ground, purple veins, a flower of high character. A double crimson in this lot showed good breeding, but the flower was not named.

MISCELLANEOUS NOVELTIES. —

The most useful and most beautiful of all the novelties exhibited this season was the collection of twelve plants of *Campanula rotundifolia* alba, var., from Mr. Chitty, of Stamford Hill. This same large flowering variety of white harebell was exhibited last year, and figured at page 170 of last year's volume of the FLORAL WORLD. On that and the present occasion a certificate was awarded it, and we congratulate the cultivators of hardy herbaceous plants, that it is now being sent out by the raiser at a price which places it within everybody's means. Another worthy novelty was *Calceolaria Cloth of Gold*, from Messrs. Downie and Laird, of Stanstead Park, Forest Hill. This will be as useful for bedding as *Aurea floribunda*, and perhaps surpass it, with its dense trusses of rich gold yellow blossoms, and fresh green healthy foliage; everybody should possess it. Mr. G. Shenton, of Hendon, sent a fine horseshoe-leaved scarlet geranium, with noble trusses of flowers of the same brilliant hue as *Defiance* Verbena, apparently an admirable variety for beds. Messrs. Jackson, of Kingston, had, among other beautiful stove

plants, a fine specimen of *Pteris cretica albo lineata*, two feet high and through, the centre of every frond marked with a broad streak of creamy-white, one of the most beautiful of the new stove ferns; also a new *Canna* from Japan, with showy heads of bloom, and enormous light green leaves; *Begonia Lizzy Gower*, the leaves wholly silvered, and the variety equal to the grandest of the class; *Phyllogathis rotundifolia*, a rosette of huge leaves, inclosing a spike of small hyacinth-like blossoms, a decided curiosity, and a most attractive foliage plant. Mr. Parker, nurseryman of Tooting, sent *Euphorbia atrosanguinea*, a tall-growing, thin-leaved species, resembling the purple orach in colouring. Messrs. Veitch had certificates for a new *Dracæna*, a new *Saccolabium*, *Vanda Lowii*, a hybrid *Cattleya*, *Lomaria gibba*, *Lapageria alba*, and *Mutisia decurrens*—the last a climbing composite, with a huge flower with reddish orange rays, a handsome and useful plant for conservatory decoration. Mr. W. Thompson, of Ipswich, again exhibited his new *Rhodanthes*, which are valuable additions to our list of choice annuals.

ROSE SHOW AT BIRMINGHAM.—This, the first provincial exhibition, devoted exclusively to the “queen of flowers,” took place on Tuesday and Wednesday, the 1st and 2nd inst., and it was decidedly the best rose show that has yet been held, whether for the quantity or the quality of the flowers exhibited. Two months ago

the season was forwarder than had ever been known by the “oldest inhabitant,” and there then seemed every prospect that the 1st of July would be all too late for the southern growers to exhibit here. But a sudden change took place. June was altogether a most ungenial month, and the rose growers of the midland counties were generally in arrear of the average season. An extensive nurseryman in this neighbourhood, writing to us a few days before this show, stated that in seven acres of roses, he had, on careful examination the day he wrote, seen only one fully expanded bloom—such being the case generally in the district.

The most remarkable stands in the room were, taking all points into consideration, those exhibited by the Rev. S. Reynolds Hole (of Cauntton Manor); and it was a matter of surprise to most visitors how so far north such magnificent blooms could be cut, while in other parts of the midland counties the rose trees are only just getting over the effects of the severe hail-storm which swept over them about a month ago. We may particularize as amongst the gems of the show, the following, shown in Mr. Hole's boxes: *Louis XIV.*, an extraordinary flower; *Gloire de Dijon*, *Senateur Vaisse*, *Madame Furtado*, *Lord Raglan*, and *Cardinal Patrizzi*. The winner of the Premier prize of £10 in nurserymen's class, for best 96 varieties (single trusses), was Mr. Cant (of Colchester), with a magnificent display of blooms.

NOTES FOR THE GARDEN.

KITCHEN GARDEN.—Take stock of all winter greens, and occupy every spare plot of ground with kale, Brussels sprouts, cabbage, broccoli, and collards. If any of the breadths are crowded, make a fresh plantation by taking up every other plant. Thin parsley, to get rid of every plant not well curled. Earth up celery and leeks, hoe between potatoes.

Sow cauliflower the third week, to keep over winter in frames. The main crop of cabbage for spring use should be sown between the 12th and 20th. Sow also suc-

cession lettuce, saladings, and turnips; and the main crop of winter spinach. Take cuttings, or sow seed, for cucumbers to fruit during winter.

FRUIT GARDEN.—Nail in all good shoots on wall trees, that they may have the heat of the wall to ripen them. Thin the shoots of gooseberries and currants. Put loose nets along fruit walls, with a hitch here and there to form bags to catch any fruit that falls. Play the garden-engine against peach and nectarine trees, to keep them clean and healthy. Make beds of strawberries.

FLOWER GARDEN.—Strike verbenas, petunias, geraniums, and fuchsias: calceolarias should not be struck till next month. Blue lobelias need not be struck, nor need old plants be saved, as *speciosa*, the best for edgings, comes quite true from the seed. Sow hardy perennials and biennials for next season's blooming. Those fit for planting out, plant where they are to remain. Put stakes to chrysanthemums before their heads get heavy. Pompones may be struck for blooming in 60-sized pots. Plant out pinks and carnations in well-manured loam. Bud rose in dull weather, water chrysanthemums, with occasional doses of strong liquid manure. Repot auriculas. Almost every kind of herbaceous plants and evergreen shrubs may now be propagated.

GREENHOUSE AND STOVE.—Whatever painting or repairing is required should be attended to forthwith, and the smell of paint got rid of before any plants are housed. Pelargoniums that have broken freely should be repotted in as small pots as their roots, after trimming, can be got into. Young stocks should be well hardened as soon as possible. Keep cinerarias and primulas growing freely, and make a last sowing of the latter. Sow now, for decorating the house early in spring, Clarkia, nemophila, erysimum, cœnothra, collinsia, veronica syriaca, mignonette. Give plenty of air to stove plants, and get a good stock of young pines forward. Vines that have ripened their fruit should be well cleaned.

AUGUST, 1862.—31 DAYS.

PHASES OF THE MOON.—First Quarter, 3rd, 4h. 56m. morn.; Full, 9th, 9h. '53m. even.; Last Quarter, 17th, 7h. 47m. morn.; New, 25th, 7h. 40m. morn.

D. M.	Sun rises.	Sun sets.	Weather near London, 1861.						Rain.	THE COUNTRY.
			BAROMETER.		THERMOMETER.			Rural Sights and Sounds.		
			Mx.	Min.	Mx.	Mn.	Me.			
	h. m.	h. m.								
1	4 25	7 46	30.010	29.935	77	42	59.5	.00	Fleabane flowers	
2	4 26	7 45	29.785	29.627	82	51	66.5	.03	Sundew flowers on marshes	
3	4 27	7 43	29.934	29.735	67	55	61.0	.01	Elcampane flowers	
4	4 29	7 41	30.028	29.974	79	47	63.0	.00	Ragwort flowers	
5	4 31	7 40	29.926	29.856	80	41	60.5	.00	Golden rod flowers	
6	4 33	7 38	30.043	29.912	78	43	60.5	.00	Hawkweeds flower	
7	4 34	7 36	29.999	29.766	76	55	65.5	.13	Ants begin to swarm	
8	4 35	7 35	29.734	29.668	68	53	60.5	.18	Meadow saffron flowers	
9	4 37	7 33	29.889	29.880	71	57	64.0	.02	Osmund royal flowers	
10	4 38	7 31	30.046	29.979	81	56	68.5	.00	Snakeweed flowers	
11	4 40	7 29	29.965	29.896	82	54	68.0	.00	Sun-spurge flowers	
12	4 42	7 27	29.889	29.700	89	61	75.0	.01	Caper-spurge flowers	
13	4 43	7 25	29.988	29.822	82	44	63.0	.00	Michaelmas daisy flowers	
14	4 45	7 23	30.032	29.818	79	59	69.0	.00	Blue camomile flowers	
15	4 46	7 21	29.771	29.746	77	55	66.0	.00	Flocks of linnets and buntings	
16	4 48	7 19	29.813	29.812	67	43	55.0	.10	Squirrels begin to store	
17	4 50	7 17	30.024	29.967	74	44	58.5	.00	Red berries conspicuous	
18	4 51	7 15	30.027	29.799	76	53	64.5	.00	Robins begin to sing	
19	4 53	7 13	29.922	29.904	72	42	57.0	.00	Wren comes to gardens	
20	4 54	7 11	30.067	30.002	75	37	56.0	.00	Beech leaves redden	
21	4 56	7 9	30.169	30.156	72	38	55.0	.00	Dormice retire	
22	4 57	7 7	30.239	30.071	71	55	63.0	.02	Harvest mice retire	
23	4 59	7 5	30.046	30.032	79	48	63.5	.00	Flowering-rush flowers	
24	5 0	7 3	30.139	30.052	72	46	59.0	.00	Sea wormwood flowers	
25	5 2	7 1	30.153	30.070	75	52	63.5	.00	Heather in full bloom	
26	5 3	6 58	30.169	30.153	80	42	61.0	.00	Mugwort flowers	
27	5 5	6 56	30.225	30.141	87	44	65.5	.00	Grouse appear	
28	5 7	6 54	30.080	29.824	83	45	64.0	.00	Second broods of caterpillars	
29	5 9	6 52	29.968	29.800	78	50	64.0	.00	Fire crested wren	
30	5 10	6 50	30.170	30.120	74	38	56.0	.00	Fungi on decaying substances	
31	5 12	6 48	30.327	30.079	84	35	59.5	.00	Caterpillar of dot moth	

TO CORRESPONDENTS.

ROSES IN POTS.—I have a nice little stock of roses in pots, which I have raised myself, thanks to the instructions in the *FLORAL WORLD*. Most of them are in the greatest luxuriance, but some few look yellow in the leaf, and on turning them out I find that the worms have got into the pots and stopped up the drainage. They must have been in the compost when potted, as the plants are plunged in coal ashes, as you recommend. I have picked out all the worms I can, and have put fresh drainage, but fear there are others still left, as I did not like to break the ball of roots, the plants being in bloom. Can you tell me what will eradicate them? I have been recommended spirits of salt, and also lime-water. Some rose cuttings put in last October and November in my garden-frame, and kept close until March, have done wonderfully well, and several of them made shoots four feet high in pots, and yet a lot that were struck and potted off early last autumn all damped off during February last. Can you account for this in any way? would it be too much water, or want of sufficient air? I have always given them a moderate quantity of the latter when the weather permitted.—*G. W. F. H.* [We have a very quick way to dislodge worms from pots. We throw about a pint of quicklime into a shallow tub full of water, stir it up, and then drop the pots into it, so that they are submerged to the brim. They remain there about an hour and are then taken out. The plants like the operation, and the worms are every one cleared out. Mere water without lime will do if the pots remain in the water an hour. We cannot advise the use of spirits of salt. The roses that damped off in February were probably very weak in the roots, and unripe in the wood. What they really wanted then was stove culture, which all late struck roses have at the nurseries.]

FLOWERING SHRUBS.—Will you tell me how to manage the *Kalmia glauca*, a fine plant in excellent leaf and growing health, but never flowering at all. The *Wigelia*, too, grows well, but does not flower. The soil is deep, fertile, and rather damp; they are in a sheltered

situation, but not overhung; the exposure southerly. Will you name the proportion of alum to a gallon of water? which I think you mentioned some numbers back, but being from home cannot refer to for a considerable time.—*L. C. B.* [*Kalmia glauca* requires a west aspect, a peat soil, the roots to be screened from the sun by its own foliage, or the foliage of plants of similar constitution, and to have abundance of water overhead while making its spring growth. Without this care it rarely flowers, and with every care it will not flower in some districts. *Weigelia*s always flower profusely when old. Leave them alone, give them no attention whatever, except to remove dead wood, and you will have abundance of blossom. The query about alum we do not understand.]

STOCKS FOR APPLES.—Will you kindly inform me in your next number what difference there is in the Doucin and Paradise stocks; if any considerable, which is the best sort to graft the delicate kinds of apple on? And please say what is the usual price of the sort which is most desirable of plants large enough to take grafts next spring, to be removed early in the ensuing autumn. Will you likewise state where I could get best suited in the purchase of a few dozen at the proper season to remove them? and may I trouble you to state at what distance from the surface of the soil should they be grafted? I want to cultivate some of the old sorts of apples, which are nearly worn out, and I understand they thrive better and keep more healthy on the Doucin stocks, grown as bushes, than any other way.—*A. P.* [The Paradise and Doucin are identical, but the English and French varieties of it differ in this, that the English Doucin or Paradise is quite hardy, and the French Paradise is tender in this country, so as to be fit only for apples to be grown as miniature bushes under glass. The English Paradise is the best stock for pyramids and bushes, because of its dwarfing quality and habit of rooting near the surface. It has not sufficient vigour for orchard standards. They are usually allowed to grow one season as they please, and are cut down the next for grafting. It

is our rule never to say where any ordinary kinds of garden stock can be purchased. You may work them as near the surface as you like. We prefer to enter the graft six inches from the ground; it depends very much upon the object in view. For bushes the nearer the ground the better. We should advise you to secure the stocks this autumn, give them twelve months' culture, and graft them in the spring of 1864. Unless they are strong, it is only time wasted to work them.]

FUMIGATING, &c.—I have a packet of the patent Aphis Pastiles, my greenhouse is much infested by aphids, but I feared to use them lest they should injure the grapes, which are beginning to swell, but *very small* yet, being very late from the low temperature and want of sun. May I use them safely now? Will the early violet fig answer in pot in cool greenhouse, no artificial heat except in *extremely severe* weather, then Joyce's portable stove at night? What is the best time for getting peach trees for pots in the same house for fruiting as early as consistent with the circumstances? [Cast your aphid powder into the rubbish corner, and procure as much of the best shag tobacco as will fill your house with a dense cloud of smoke; this will effectually destroy the aphids, and you will run no risk of injuring your vines and plants by the combustion of the Cayenne pepper and other noxious matters of which the pastiles are so largely composed, and will besides be less costly in the end. The early violet fig will do first-rate in a cool house in a pot. As you so seldom use fire-heat, when the frost is very severe, put your figs in pots under the stage, or somewhere where the frost cannot reach them. The above-mentioned kind stands No. 1 with Mr. Rivers for pot culture. Order the trees in October, or earlier, so as to make sure of getting them potted early in November.]

ROSES FOR CARMARTHEN.—Do you consider *Senateur Vaisse*, *Victor Verdier*, *General Washington*, *Gloire de Santhe-nay*, and *Anna Alexieff* to be thoroughly hardy roses, and also of vigorous growth? as none but hardy roses will succeed here. Our county of Carmarthen is wetter than almost any county in England or Wales, and we have often severe frosts in the winter. The soil is heavy, but nevertheless requires much manure before roses can be made to succeed well. Do you recommend

purchasers of roses to have them from the growers in November, or to wait till the spring?—*Inquirer*. [The roses you name are vigorous growers, and very hardy. Plant them *now*, if you can get them, in 48-sized pots. Standards and large specimens should be planted in November or March. Small plants from pots may be put out any time from May to the end of August.]

GREENHOUSE PLANTS.—I have a good collection of geraniums, and a well ventilated greenhouse, but every year the leaves get covered over with a clammy kind of smut which quite spoils their appearance. What shall I do to prevent it? I have two tall *neriums* going on badly. Shall I cut them down? and when would be the time? Would an old hedge of blush roses bear cutting down when the flowers are off? I have a fine tall-growing geranium, about ten feet high; it was a great ornament in the greenhouse, but had only blossoms at the top.—*J. Z., Tipperary*. [The tendency of all geraniums is to run up and blossom only at the top, therefore pruning must be resorted to, and the operation performed twelve or fifteen inches below the height at which you wish the plant to bloom, which length of growth it will make before the flowering season. The clammy smut is the excrement of the green-fly mixed with dust and dirt from other sources. Your plant must have been very much infested with them. Fumigation with the best shag tobacco should be resorted to as soon as ever aphid makes its appearance. Choose a still, damp, and if possible, a foggy night for this operation, and use means to fill your house as quickly as possible with a dense cloud of smoke. If your *neriums* are showing flower, let them bloom before cutting them down; if not showing flower, cut one down to within six inches of the bottom, and encourage the other to grow, by shifting it into a larger pot, using good loam, and place it in your greenhouse so that the top of the plant may almost touch the glass; you will thus secure bloom next year. After which you may cut it down, shift back, and encourage to grow. In two years from the time of cutting back your plants will bloom finely. (See *FLORAL WORLD*, vol. iii. p. 11.) Do nothing more to your roses now than cut off the decaying flowers; in February prune them to any height you may wish.]

THE
FLORAL WORLD

AND
GARDEN GUIDE.

SEPTEMBER, 1862.



N the neighbourhood of towns villa gardens are generally very gay during four months of the year, and very dreary during the remaining eight months. Sweeping assertions are not always strictly true, and our desire being to be severely truthful we must admit that in all directions in the suburbs of London there are many honourable exceptions to what we must nevertheless consider as the rule. Considering the gardens in and about London *en masse*, they are vastly different to what they were ten years ago, and in future editions of the "Town Garden" we shall not have to describe them, as we have done, in terms far from complimentary to their proprietors. As to the general improvement, we will, at the risk of being thought egotistical, take some credit to ourselves. The "awakening" accomplished by the "Town Garden" has been sustained by the teachings of the FLORAL WORLD, and you now see in the fore-courts of all the respectable villas plenty of evergreen shrubs, amongst them occasionally beautiful coniferous trees, such as Araucarias, Cedrus deodara, specimens of yews, junipers, and others that have been recommended in these pages as well adapted for town soils and atmospheres.

Well, things are improved and improving. If floriculture only here and there finds hearty support at the hands of an enthusiast in tulips, auriculas, pansies, etc., etc., the general appearance of the gardens is cleanly, and when the "bedding out" season arrives, Tom Thumb geraniums and yellow calceolarias are planted by millions, and generally repay their possessors with an abundant display of colour. Our occasional tilts at the "bedding system" in these pages are, as our readers know well enough, not intended to "run it down"—we might as well attempt to run down an express train by means of a wheelbarrow—but simply and solely to put people in mind that there are *other* subjects in the vegetable kingdom worthy of care and fit for decorative purposes, as *e. g.*, Sweet Williams, Campanulas, Oenotheras, and other of our grandmother's

favourites, now too generally neglected for the sake of masses of distinct colours. But we must admit, on the other hand, that bedding plants are eminently adapted for London gardens, many of the best herbaceous plants, by being consigned to narrow borders, bloom poorly and perish in the winter, and in very many cases the people have neither the skill nor the patience necessary to propagate them, and so those that live in spite of neglect grow at last to large un-ightly stools, and those that need renewing every year by slips, seeds, pipings, etc., are in process of time lost altogether. Now suppose we grant that the bedding system should be developed to the utmost of its capabilities by townsfolk, as at least the best of all styles for those portions of front and rear gardens immediately within view of the windows, then our sweeping assertion acquires additional force, that the extra gaiety during July, August, and September has to be contrasted with extra gloominess from November to May. If the attachment of a piece of ground to a dwelling-house is to render the habitation more agreeable to the tenant, then the garden should be gay at all seasons, and it may be so without difficulty or great expense. All the useful trees and shrubs suited for smoky atmospheres have been noted in these pages; we have described the best modes of furnishing beds in winter with pretty evergreen shrubs lifted with good balls, and planted temporarily, and also by plunging potted conifers, the best of which are cheap, and require as little skill to manage them as any subjects in the catalogue. But it is when the first gleams of spring sunshine light up the opening buds of deciduous trees that London people sigh for flowers, and bethink them of the primroses and violets of the forest, wishing in their hearts that such things would grow in town gardens as they do on the mossy banks miles and miles away. Now these things do not like confinement, and though they can be grown in the midst of smoke and dust, there are very few who will bestow upon them the care they require under such circumstances, so that being unattractive during at least ten months of the year, they meet with general neglect, and must either be annually renewed or not enjoyed at all.

Now to make an end of the difficulty is an easy matter enough. Push the bedding system to its ultimate capabilities, and as greenhouse plants are used to make a show late in the season, spring-flowering bulbs must be adopted to furnish flowers in plenty at the season when of all others flowers are most acceptable. We have the crocus, early tulips, hyacinths, snowdrops, the winter aconite, and narcissus. There is nothing of an experimental character in adopting these for the embellishment of town gardens; procure good bulbs and plenty of them, plant them in good time, and a grand show will be the certain result. It is the expense that frightens people, and that because they look at catalogues and find hyacinths priced at from ninepence to a guinea each, and crocuses at six shillings a hundred, and tulips at two or three shillings a dozen. There is no occasion to pay such prices merely for the decoration of beds and borders, and for general purposes, with people who are not critical about the shape and substance of their flowers, and the merits of rare and curious varieties, a few hundred or thousand of the cheaper kinds in distinct colours will always be preferred to a few dozens of the varieties over which florists would utter learned dissertations. Of course we might at this point suggest elaborate plans for quarterings of crocuses, centre-pieces of tulips, ribbons of hyacinths, etc., and we have in mind a few examples of

attempts to combine all these spring-flowering bulbs in geometric patterns, and after much labour and expense had been incurred, those attempts failed of their purpose because the various kinds would not bloom at the same time as they were desired to do. Let the clever gardeners do as they please, we are now chiefly anxious about the gardens of people who are neither stingy nor dreary except by compulsion, but who have every thing to learn in the way of ornamental gardening. This part of the subject is easily learnt, for off-hand purposes. Select the bulbs, plant them in clumps of not less than a dozen each for all small bulbs, and from five to seven each for all large bulbs. Instead of endeavouring to form geometric patterns of many distinct kinds, plant them with regard to height and colour only, and let every clump be of one distinct colour, and no mixtures anywhere.

For this sort of work early single tulips may be had at from nine-pence to eighteen-pence a dozen, the double ones need not be used at all. Crocuses at eighteen-pence to half-a-crown a hundred will give plenty of colour; use the common yellow, blue, and white, in distinct clumps. Most of the dealers in bulbs now sell hyacinths for beds in distinct colours and good bulbs at from three to four shillings a dozen, and single snowdrops rarely cost more than eighteen-pence a hundred. Five pounds' worth of sorted bulbs would make a grand show around the windows of a villa residence, and instead of voting the outlay a waste, the proprietor would probably resolve, long before they were out of bloom, to keep as many of them as possible for the next season, and then expend ten pounds instead of five, so much real enjoyment would his family have for so small an outlay. No garden should be without the winter aconite, *Eranthus hiemalis*, which can be purchased for six shillings a dozen, and there is nothing more cheerful in the whole catalogue of spring flowers than the yellow blossoms it produces in profusion during January and February.

The reason we call attention to this matter now is, that preparations may be made in time for planting bulbs in plenty, wherever the cultivators of villa gardens have a desire to enjoy their gardens in the early spring. There is no occasion for making composts, a liberal dressing of the borders with rotten dung is all that is necessary, and even this, where the soil is in good condition, may be dispensed with. Procure the bulbs early, and have all ready to plant as soon as the bedders begin to decline. If the clumps are a foot apart they will have a good solid effect when in bloom, and with proper care in planting and taking up, all except the hyacinths will be useful the next and future seasons; and if they have to be renewed every year their cost will be made up in the increasing value of the rest, for early tulips, crocuses, and snowdrops increase very rapidly, and the hyacinths will increase too if treated according to the directions for their management already given in these pages.

THE FERNERY AT ABBEY GARDENS, RAMSEY.

THIS is one of the best out-door ferneries in the Midland counties, and is the work of our occasional correspondent, Mr. J. Howlett, the gardener there. The fernery is cut through a shrubbery, in the form of a pit, so as to create a huge hollow suitable for ferns, which thrive best in a moist soil and shady position, and also to afford facilities for the production of

picturesque effects. Mere piles of rock and root-work planted with ferns are always agreeable accessories in garden scenery; but their obviously artificial character renders them at all times liable to severe criticism as pretexts and shams; but it is better, in most cases, where it is desired to grow ferns in small gardens, that there should be subjects for ungenerous sarcasm than that the cultivator should go without ferns altogether, because he cannot command space for extensive banks and hollows and the accompaniment of rock-work more closely imitating Nature than the miniature piles generally resorted to. Here, however, the plan adopted is such as to connect the obviously artificial with the apparently natural in a most agreeable and appropriate manner. The excavation is about 180 feet in length, and the soil removed is thrown up to form the banks, ranging from 12 to 16 feet in height, and arranged in irregular windings and bays so as to afford suitable positions for groups of the most characteristic ferns. The fernery is approached by a walk, over which there are five arches, each 10 feet high. The first of these, at the entrance, is an iron arch of heavy design, opening by an iron gate, and festooned with hops. The second arch is of wire, and covered with convolvulus. The third arch is of stone, and forms a bridge across the chasm to connect the banks together on either side. The walls of this are covered with ivy. The fourth arch is of wire, and covered with wild convolvulus. The fifth is stone, covered with ivy, and on the right of this is a waterfall which, flowing into a recess in the lower part of the ground, supplies the conditions requisite for aquatic ferns and grasses, and gives a pleasing variety to the scene. The walk is irregular—in some places 30 feet in width, in others 6 feet. This, of course, causes the banks rising on each side from the walk to present a variety of features, and the narrowest parts being chosen for the arches, every arch commands a distinct and beautiful scene. Those portions of the banks that rise abruptly are kept up by means of rough blocks of stone and clinkers, which prevent any crumbling down of the earth upon the walk. The banks are planted with British ferns and flowering plants, and on the summits of the banks are masses of shrub, polled ivy, rough arches of hops, and other masses of foliage, to shut in the scene, and while giving it seclusion, they contribute also to keep it shady, to the benefit of the ferns. The soil being not well adapted for ferns, a large quantity of good loam and leaf-mould was previously prepared for the purpose, and all the ferns were planted in this artificial soil—those preferring to be always moist at their roots being planted at the base of the banks or near the flow of the water; those on the banks have in most cases stones or clinkers placed round them to protect their crowns, as the banks being in some places very steep, there is always a liability to a crumbling of earth upon them. These also serve to keep the roots moist.

In addition to the trees which fringe the summits, and break the continuity of the banks, there are many distinct clumps formed of old hollow trunks of trees, and most of the best specimen *Athyrium*, *Osmunda*, etc., are planted in tree roots in various positions in the widest parts of the walk; these add much to the interest of the whole scene, and prevent any lingering appearance of formality. In fact, it was an object from the first to make the scene as much as possible like a natural dell, and now that mosses and other plants common to such places are beginning to appear in plenty, that object may be said to be thoroughly realized.

THE GREENHOUSE AT THE ABBEY GARDENS, RAMSEY.



The fernery is chiefly planted with species collected in the district. The most conspicuous and handsome species of ferns are *Polypodium vulgare*, *phegopteris*, *vulgare bifidum*, a very handsome variety; *Polystichium aculeatum*, *angulare*, *lonchitis*; *Lastrea filix-mas*, *dilitata*, *thelypteris*, *spinulosa*, *cristata*; *Osmunda regalis*, grows finely near water, or on a damp and shady bank; *Scolopendrium vulgare*, *vulgare sagittifolium*, and some other varieties; *Asplenium adiantum nigrum*, *A. ruta muraria*, a beautiful dwarf fern for planting among stone-work, or where it can root in old mortar; *Adiantum capillus veneris*, or common maiden-hair, also suitable to grow on shady walls; *Pteris aquilina*, or common brake, this is planted in large quantity, and forms grand masses on the banks; *Blechnum spicant* and *Blechnum boreale* are largely used on the fronts of the rockeries next the walks, where they form beautiful spreading tufts.

Among the flowering plants are Foxgloves; *Epilobium roseum*, a showy willow herb; double feverfew; *Hypericum quadrangulum*; *Centaurea nigra*; *Eupatorium cannabinum*; *Campanula rapunculus*; *C. rotundifolia*; *Linaria vulgaris*; *Achillea millefolia*; *Scabiosa arvensis*; *Ajuga reptans*, the bugle; *Sempervivum tectorum*, the common house leek; *Borago officinalis*, the common borage; *Spirea ulmaria*, the meadow sweet; variegated sage; variegated thistle, *Carduus marianus*; *Solanum dulcamara*, the deadly nightshade; *Vinca major* and *minor*; *Sedum acre* and *glaucum*; *Saxifraga granulata*, *umbrosa*, and *cæspitosa*; *Ononis spinosa*, the rest harrow; *Verbascum nigrum*, or black-rooted mullein; *Lunaria biennis*, or honesty; *Coronilla varia*; *Achillea ptarmica flore pleno*, the double sneezewort; *Cardamine pratensis*, the cuckoo flower; *Cerastium tomentosum*; *Hesperis matronalis*; *Butomus umbellatus*, the flowering rush, grows well under the waterfall. Also in clumps, in positions suited to their several habits, cowslips, primroses, violets, antirrhinums, rock and shining lychnis, columbines in variety, lily of the valley, rock rose, or *Cistus*. These produce a gay effect amongst the ferns, and at all seasons of the year there are many species in bloom, so that the scene is always beautiful and interesting.

SUMMER ROSES.

For exhibition, and also for grand display in the rosarium, the following are well adapted. With the exception of the White Bath (very hardy on Manetti), and *Cillet Parfait*, unapproached as a variegated rose, they are all of iron constitution. Moss—Gloire des Mousseuses, White Bath. Hybrid Provence—Blanchefleur, Princess Clementine. Hybrid China—General Jacqueminot, Madeline, Beaufremont. For Poles—Chénédole, Brennus, M. Plantier, Triomphe de Bayeux. Hybrid Bourbon—Paul Ricaut, Coupe d'Hébé, Charles Lawson, Paul Perras, Comtesse Molé, fine and quite distinct; Charles Duval. For a Poie—Frederick II. Galicia—Adèle Prevost, Cynthia, Kean, Boule de Nanteuil, Ohl, Napoleon, d'Agues-

seau, La Volupté, Triomphe de Janssens, Tramon Goubault, W. Tell, Sanchette, *Cillet Parfait*, Tricolor des Flandres. Damask—La Ville de Bruxelles, M. Soetmans. Alba—F. Parmentier, M. Audot, the only true flesh; La Séduisante, Queen of Denmark, Sophie de Marçilly. Austrian—Persian Yellow, Harrisonii. These are pure yellows, and fit for decoration. I should be sorry to be without the roses just named; they should be retained. How grandly have they bloomed in both my gardens! how healthy do they look in the midst of many rain-sickened H. P.'s! Moreover, they have this attribute—you may hack them for bouquets day after day without doing them an injury.—*Rev. W. F. Radclyffe, in Chronicle.*

AMARYLLIS, CRINUM, AND HÆMANTHUS.

BY ROBERT SWEET, F.L.S.

(Extracted from the first Volume of "Loudon's Gardeners' Magazine.")

Of all the genera of hothouse bulbs that are cultivated in our gardens, none can vie with the beautiful genus *Amaryllis*, of which there are now numerous species, and also a great number of hybrid or mule productions in our collections, some or other of which are producing their splendid flowers all the year through. The mule plants are in general more hardy, and flower more readily, than the original species, which makes them very desirable. In the nursery of Mr. Colvill, a great quantity of hybrid productions have been raised from seeds, and several hundreds of them were in flower all through last winter and spring, which was occasioned by the following method:—They had been grown in frames and pits all the summer; and in autumn, when it became time to remove them to the hothouse, they were taken out of the pots, and the mould was all shook clean from their roots; they were then laid on shelves in the house, and as the leaves and roots began to decay, they were cleared away, that they might not injure the bulbs. As soon as the bulbs became dry and hard, some of them began to show flower, and others continued to do so all the winter and spring, seldom being less than a hundred, sometimes two or three hundred in flower together, when scarcely any other plant was in bloom. As soon as they show for bloom they should be potted, and the sooner the better, as they draw up weak, and do not flower so well, if allowed to remain too long after showing bloom; as soon as potted they must be placed in the hothouse, giving them but little water at first, but as the pots get filled with roots they will require a greater supply. The sorts that succeed best in turning out are, *A. reginæ*, *Johnsoni*, *crocata*, *acuminata*, *rutila*, *fulgina*, *psittacina*, and *vittata*, and all the hybrids that have been produced from them. *A. aulica*, *calyptrata*, *solandæflora*, and

reticulata, do not like turning out so well, as it is their nature to continue growing all the year through, and the hybrid productions from those partake of the nature of their parents. They only require to be kept dry a considerable time in their pots to make them flower, except any get sickly, or the mould gets sodden in their pots; they should then be laid by to dry for a considerable time, or they will be apt to rot. By laying the bulbs to dry in this way, a far greater number may be grown than could by any other means, as by their being laid to dry on shelves, other plants can be grown in the space that they would occupy if kept in pots. *A. reticulata* and *striatifolia* succeed best in light turfy loam, mixed with sand; all the other sorts we find grow more freely in about one half light turfy loam, rather more than a third of white sand, and the rest turfy peat; the use of the turfy soil is to keep it from binding or getting hard in the pots, which it will do if sifted fine; the fibres in the turfy soil also keep it open, that the roots may pass readily through it; the pots must also be well drained with potsherds, that the moisture may pass off readily, as nothing injures bulbs so much as to be sodden in the pots; the roots are also very fond of running amongst the small potsherds. It is a very bad plan that is generally adopted of placing a piece of flat tile or potsherd over the hole at the bottom of the pot, for by that means, by continual watering, the hole gets as firmly closed as if corked up, and the water remains in the pot, soddening and souring the mould, and very often occasions the plant to rot. The better way is to lay a hollow piece of potsherd about half way the hole, then to lay another piece two against it, and to fill up all with a handful or two of ~~of~~ broken small, according to the pot.

Seeds of this ger

most other bulbs, should be sown as soon as ripe, and when the young plants are a few inches high, they must be potted off, either singly or several in one pot; if a hotbed frame be ready to receive them, all the better, as they will grow much faster in frames than in the house; as soon as their pots are filled with roots, shift them into larger ones, giving them three or four shifts in the course of the summer; they will then grow rapidly, and many will flower at twelve months old, particularly any mules from *A. reticulata* or *striatifolia*.

As the different species of *Crinum* and *Pancratium* continue growing at all seasons of the year, they will succeed better to be kept in pots continually, only shifting them occasionally into larger ones, as the others become filled with roots, for the more room the roots have to run, the finer the flowers will be; and *Crinum amabile*, if grown in a large pot or tub, will produce its magnificent and fragrant flowers four times every year. They will all require occasionally to have the mould all shook from the roots, and the suckers taken off, or otherwise they will become unmanageable. As they are of stronger and more vigorous growth than *amaryllis*, they will require rather a stronger soil; some good rich loam, mixed

with nearly a third of sand, and a little peat to keep it open, is the best soil for the different species, also being careful to have the pots well drained with potsherds; and if any bulb should chance to be getting rotten, or have lost its roots, it must be dried in the way recommended for *amaryllis*. Any young plants that are wanted to grow fast, should also be placed in a hotbed frame or pit in summer, and as soon as one pot is filled with roots, it should be shifted into a larger one; by that means they will soon become flowering plants.

Hæmanthus multiflorus is a tender stove bulb, which requires a great heat, and particular care to grow and flower it well; the same soil as recommended for *amaryllis* is suitable to it, and bulbs that are fresh imported should be potted and placed in a hotbed frame, but they will require very little water until they have made fresh roots; they will then need a frequent supply, but they will always require a warm situation in the hothouse, and care must be taken not to water them over the leaves, as it very frequently gets into their hearts and rots them; one reason, we believe, of their generally surviving so short a time in most collections, which is the more to be regretted, as they are splendid flowering plants.



THE CULTURE OF *GLORIOSA SUPERBA*, OR *CLINOSTILIS SUPERBA*.

THIS highly ornamental plant is a native of the East Indies; and, like other intertropical plants, requires a strongly-marked seasonal treatment. As these remarks will be too late to assist or apply to the growth of the plant during the current season, I will begin with the period of rest. This usually takes place about the middle or end of October. As soon as the foliage and stems have decayed, the pot should be removed from the bark-bed and placed in a dry part of the house—an elevated shelf is the best—at a distance from the fire, as all the heat necessary at this time is just sufficient to preserve the earth

about the tubers from damp. Another pot, one size larger, should be inverted over it to prevent water or other moisture having access to the roots. A very great error is sometimes committed in leaving the root to start in the same pot and soil it grew in the previous year. The plant naturally requires about six months' rest: consequently, should remain undisturbed till about the middle of March; when it should be shaken out of the old soil, taking care not to break them unless nature has shown where it is practicable to separate them easily. The soil used for repotting should be composed of about equal

parts good sound loam and peat or heath-mould of good quality. The pots to be suited to the size of the root—those about six inches over are usually employed; and here it must be explained, the shoot for the ensuing year being formed at the base of the new tuber, in repotting the root should be inverted, placing the bottom upwards, or otherwise it has to struggle through the whole mass of earth contained in the pot, which it often fails in doing. In potting, therefore, the base of the tuber should be kept just above the surface of the earth in the pot, from whence as soon as it begins to grow it will emit fresh roots into the soil below; it should be plunged into the bark bed of a stove or vinery,

or placed in a cucumber frame, with a temperature of about 70°. But little water is required at first, which should be increased as the plant grows. About the end of April, if growing strongly, another shift may be given; placing it this time in a large pot, with a soil similar to that before recommended, at the same time securing a perfect drainage. The plant will now grow rapidly, and may be trained in any desirable form. Plenty of water should be given during the summer, with occasional syringing overhead.

With this treatment an abundant supply of its brilliant flowers and healthy roots at the same time are certain to be obtained.

J. T. BRUCE.

THE PANSY.

ONE of the greatest triumphs of hybridization has been achieved in the case of the heart's-ease, or pansy; a fact which may easily be demonstrated by instituting a comparison between the "*Viola tricolor*," or common field pansy, and the hybrid varieties exhibited at the summer shows, or any of the splendid varieties to be found in the numerous collections of this favourite flower. The grand stimulating causes, to which may be traced the rapid progress towards perfection which, during the last ten years, has been so visible in the pansy, are, unquestionably, the competition and rivalry excited and cherished by the institution of Floricultural Societies throughout the kingdom. It is idle to suppose that the high prices asked and obtained for certain specimens of the pansy, possessing the desirable qualities of shape, colour, size, etc., would have been generally given, except for the purposes of exhibition, because for border ornament many varieties which to the exhibitor are worthless, are more appropriate than those which are purchased at a high price for exhibition. While, on the other hand, it is equally certain that, had the maximum price of the pansy been that usually demanded for mere bor-

der varieties, the assiduity, perseverance, and skill, by the exercise of which the pansy has been elevated to its present standing, would not have been expended on its cultivation.

But while so much has been effected in the way of improvement, a great deal yet remains to be done, ere we dare hope to see a pansy which in every point will bear the rigid scrutiny of a thorough judge. So many concurrent circumstances are requisite to a perfect pansy, that, in my opinion, all which have as yet presented themselves are more or less defective. If, indeed, we judge by comparison with older varieties, we shall be struck with the comparative perfection of many recent ones; but if we form in our mind the model of a perfect pansy, we shall find the best in existence fall short of our standard. What is gained in size is often lost in shape; or if these qualities are both present, a defective arrangement of colour, a confused eye, or a crumpled edge is apparent, to counterbalance any superiority that the flower may otherwise possess.

Florists are pretty generally agreed on the qualities which are desirable in a pansy; the following hints upon the subject may, however, be interesting and useful to some of our readers:—

The first and most important quality is shape or form; this is perfect, when a pencil drawn round the outer edges of the petals would describe, on a sheet of paper, a perfect circle. The second desideratum is a due proportion between the several petals. Not unfrequently the shape of a pansy may be tolerably circular, while, nevertheless, the lower petal or lip, or even the upper petals, are disproportionably small or large. The eye must be our guide in determining this point of qualification; and let it ever be borne in mind that, in the lower petal, a depth and width proportionate to the back and centre petals are essential to perfection. Perhaps the next points in importance are, flatness of the petals and smoothness of the edge. When the petals curl up it is a great defect, and rough jagged edges are sufficient to condemn any flower which is tried by the full standard of perfection. The arrangement of colours now remains to be considered; and if, in addition to the points already enumerated, this be satisfactory, in our judgment the pansy is perfect. Size is of course a desideratum; and without a certain proportion of this quality, a pansy is quite valueless to the exhibitor; but certainly this quality is not essential to the perfection of the flower. A small pansy may be as perfect a flower as a larger one—the size of the latter being an additional and invaluable excellence, and not a fundamental constituent of its perfection; just as the person of a small man may present a model of the human form in its highest perfection; but, nevertheless the additional stature and bulk of another, united with an equal proportion of parts, may invest him with undeniable superiority.

With regard to the arrangement of colour, it must, upon all hands, be admitted, that much, if not the whole depends on taste. We are quite of opinion that uniformity of ground colour is highly desirable, although seldom attained except in the lighter varieties bred from Thomson's *Victoria* and flowers of that class. An equal distribution of colour is also much to be desired, and many a va-

riety is comparatively of little value, because there is not a sufficiency of colour in the centre and lower petals to correspond with the richness of the upper petals; this imparts an appearance of poverty to the flower, which detracts greatly from its merit. The lines of the eye should in every case be clear, rich, and full. In our large dark flowers the eye is almost invariably defective; and a few rich mulberry, maroon, plum, and other dark flowers, with a clear white ground and a thorough-bred *Victoria* eye, are greatly to be desired. It is scarcely necessary to remark, that clearness, vividness, and intensity are the grand desiderata in the colours themselves.

With respect to the culture of the pansy, we may remark that the pansy thrives best in a strong rich loam, not a stiff retentive soil, but sandy and well drained. On such a soil but little manure is necessary, and perhaps a little exhausted tan may be found more congenial to the plant than a rich manure, which would excite an unnatural and straggling growth, with proportionally small blooms. A dry gravelly soil is perhaps the most uncongenial; and we should recommend, under such circumstances, that the natural soil should be removed to the depth of a foot or eighteen inches; the bottom and sides of the pit well lined with clay, and then filled with good virgin loam of the desired quality. The usual time for dividing and planting out is the end of September and the month of October. But where a succession of bloom is desired, we would recommend that a stock of young plants, reared from cuttings—which are always preferable to the divisions of the old plants—be kept in pots and planted out at various seasons; say October, March, and June. For the first planting choose a warm sheltered border; for the second, a free open space; and for the June planting, select a shady border, where the plants, without being under the drip of trees, will be shaded by their foliage from the intense and burning rays of the sun.

If the circumstances of soil and

situation are thus favourable, the pansy may be retained in bloom during eight months in every twelve, and will produce its beautiful flowers with a very moderate share of attention. In conclusion, I may perhaps, as a cultivator of the pansy, be excused, if I briefly state the reasons which induce me to think that, of all the florist flowers, excepting perhaps the geranium, which is a greenhouse plant, the pansy merits the most extensive patronage. And first, it is easy of cultivation; secondly, its blooming season is greatly prolonged. The tulip, ranunculus, pink, carnation, etc., are difficult of culture and very un-

certain, often disappointing the most assiduous care; and when brought to perfection, we are scarcely aware of their presence before they prepare to depart. And even the dahlia, whose constitution fits it for a prolonged season of blooming, is so susceptible of cold, that in our climate it is often cut down ere it has arrived at its full perfection. Far different is it with the pansy, which amply repays the comparatively small amount of care and expense bestowed upon it, by a long-continued succession and redundant profusion of its beautiful flowers.

JOHN HENCHMAN.

A RESUMÉ OF THE ROSE SEASON.

Experientia docet—experience does it, as we used to construe at my old grammar school. The summer rose season has gone by, and in rose growing, as in other sublunary pursuits, time too often gives us reason to modify previous opinion. I do not know whether it has been owing to the peculiar weather we have passed through, or whether the experience of others corresponds with my own, but I am sorry to say that I must this year report unfavourably of many of my former favourites. Some of them I shall entirely discard to make room for experimenting upon fresh varieties, and to some I shall give a further trial before banishing them from the rosery.

In making the following *resumé* I shall specify, in classes, those which have done absolutely well, and they will be found to afford a beautiful little collection, whether for the purposes of the garden, or for exhibition. To begin with *T' eas*. I have been as surprised as delighted with my success in these beautiful roses. G. de Dijon, Devoniensis, M. Villermoz, A. Oger, Homere, Madame J. Halphin, and Viscountesse de Cazes have been altogether excellent. The latter, of which I have two (own roots), has been very free and good, though usually, I believe, considered somewhat tender. I have seen some good

standards of it too. Noisettes are, A. Vibert, America, La Biche, and Narcisse—the last, by the way, is much superior to C. Forestier, especially for us townsmen.

Bourbons: Malmaison, Comice de Seine et Marne, George Cuvier, Marechal du Palais, a strong climber, much like Paxton, and George Peabody, have been very good, though Malmaison has not always opened well, owing to the weather and want of heat. George Peabody is a dwarf grower on its own roots, but a very free bloomer, and of a very nice hue.

It is the hybrid perpetuals, however, that must always form the *pièce de résistance* of the rose garden. Those that have done the best are as follow:—Anna Alexieff, Alphonse Karr, Anna de Diesbach, Chabillant, Madame de Cambaceres, one of the best roses for every good purpose that we know; the General, Jules, Madame Knorr (Madame not Madmle.), E. Verdier, M. Domage, superb; Ravel, Sénateur Vaisse, Souvenir de L. Gower, M. Laffay, and Victor Verdier. I would add the Geant, but he comes too small.

The following have done fairly:—Admiral Nelson, a capital pillar rose; Duchess of Norfolk, Marie Dauvesse, Madame Van Houtte, Belle de Bourg la Reine, F. Arago, Maria Portemer,

Lanzezeur, Prince Leon, T. de l'Exposition, very well ; M. Vidot, flowers small ; T. de Paris, good in all but the colour, which has been many shades too light ; and W. Jesse. Bourbons : Apolline, Bouquet de Flore, Lord Palmerston († a Bourbon), and Aurora du Guide. As I have more than one hundred sorts, I must pass over those which have only been amongst the mediocrities.

The failures, alas ! must include many varieties of good repute. Alexandrine Bachmeteff, Auguste Mie, Louise Odier, Jaques Lafitte, Wm. Griffiths, Mount Carmel, Madame Campbell, Ardoise de Lyon, and Cardinal Patrizzi. The last has done particularly ill, worse than any except Louis XIV., which has been most vile. A few small mouldy balls, with a tow-like tuft in the centre, is all I have had from it ; indeed I have come to the conclusion that under the best conditions it is an overrated rose. I like F. Arago much better.

Of the newer sorts, novelties, and those which call for special remark, I must first comment upon E. Appert. The growth and foliage of this variety is superb. I have it on its own roots, and on the Manetti, and one way seems as good as the other, but it has not yet given me a single bloom ; whether I shall get a rush late in autumn I cannot say, but this behaviour is much like that of a summer rose which has come blind. B. C. Guillot grows nicely, but is, I fear, tender on its own roots—indeed most new Bourbons are so. Washington has not done much at present. Duc de Cazes, T. d'Amiens, Jean Bart, and Terre Noir I must give another season. They were, of course, small

plants out of pots ; turned out late I have not yet had much chance of proving their quality. Terre Noir, I think, will be one of our best very dark roses. Santhenay also appears to be very shy. M. Furtado I will not try ; it is too La Reine-like, and I fear will not open well. Of the varieties of 1862 I have seen nearly all, some 60 or 70 sorts, and have experimented myself on the following. They are all on the Manetti, as most novelties must be, and were fine specimens of the superior manner in which the Messrs. Fraser turn out their new varieties, being of a good size to begin with :—Alphonse Damazin, darker than described in the catalogue, as is also Maurice Bernardin, though, in the forcing house, when I first saw it, it was a brilliant vermilion ; Beauty of Waltham (Wm. Paul's), a good grower, will make a townsman ; Charles Lefebvre, Triomphe de Caen, a fine grower and a splendid colour, at least to my thinking ; Col. Cambriels, vigorous grower ; L. Darzins, white—how badly we want a real, good, perpetual white ! Madame Batin, Mareschal Vaillant, very fine grower ; Souvenir de Comte Cavour, the same ; and Viscomte Vigier. All these I know to be good ; they all appear to do well with me, but I must try them another season before I can finally recommend them. I name them here that cultivators may look out for them in their autumnal trips to the rose nurseries, which they ought now to be thinking about, to mark the plants they wish to have in November. "It is the early bird that gets the worm," the old proverb says, and it is the early purchaser that gets the pick of the rose beds.

Homerton, Aug. 15.

PRIOR.

NOTES ON NEW ROSES.

If one fact has been made more evident than another by the rose shows of the past season, it is that, at present, size is accounted as the first point of merit in a new rose. No matter how great its deficiencies in

other respects, bigness and beauty appear to be considered identical in the eyes of the judges ; so that a brewer's nightcap gathered into folds with a good sized marigold tacked into the centre, would be a tolerable re-

presentation of the style of flower our modern censors delight to honour. Seriously, for the future position and progress of the rose, it is time to protest against this craving after mere monstrosity; for the result must be the sacrifice of symmetry, and even colour and character, as is shown by too many of our most perfect varieties when forced into an unnatural size. Another result will be, that many of the most beautiful of our present varieties will be thrown out of cultivation, and their loss will not be appreciated till too late to recover them. It must not be forgotten, also, that this apparent bigness in exhibition flowers is very disadvantageous to the amateur, who, when he has the varieties in his own garden, where perhaps the soil and climate are not the most favourable for culture, finds the giant he admired dwindled to a dwarf, and perhaps blames the nurseryman who supplied him for sending inferior plants. This is particularly the case with new dark roses, which invariably come smaller than the blooms at shows, where they are exhibited with every adventitious means of cultivation the art of the grower can supply. Nurserymen are scarcely to be blamed for this so much as the censors, who ought to disqualify every new variety that is not thoroughly distinct and symmetrical, particularly in the centre. It is much to be desired that some means could be adopted to check the wholesale importation of rubbish we receive annually from the French raisers. It must be a serious risk, and often loss, for such growers as Mr. William Paul, Messrs. Wood and Son, the

Messrs. Fraser, etc., etc., who are obliged to invest every year a heavy sum for fifty or sixty varieties from France, on the mere speculation that some half dozen may turn out worthy additions to the catalogues, the rest of the introductions never being asked for a second season. Accordingly they deserve every support for their enterprise, which, amidst many failures, secures the few real advances upon previous perfection, which season after season are added to our rose lists.

I would just remind cultivators that now is the time to begin to look out for autumnal blooming varieties. I would say to such, make a day out, and go to some first-rate establishments, such as those I have named above. There you will not only see the choicest collections of established favourites, but the *novelties* also, which you will not find at second-rate nurseries, and so be made *au courant* with the rose lore of the day. There are some few of very recent flowers worthy of being added to even limited collections, whether in the country or the suburbs. I do not know a greater treat to the floral enthusiast, or a greater "distraction" from the cares of every-day life, than a trip to one of these first-class nurseries, when the pleasures of travelling through the fresh air, and amidst rural scenery, are enhanced by the display of gems that awaits the termination of the journey, where high keeping and artistic arrangement add increased attractions to the beauties of Nature.

PRIOR.

Homerton, Aug. 15, 1862.

THE FRIENDS OF MY YOUTH, WHERE ARE THEY ?

I DON'T want to be thought ill-tempered, morose, ignorant, stupid, or cynical, but I can't help feeling an occasional touch of pity for many of my friends who are just now enjoying their gardens. To be sure if they do enjoy them, that is the very purpose gardens are for, and I might find it difficult to make out a case for pity. Per-

haps there is somewhat of prejudice at the bottom of it, but I hate the bedding system in private gardens because it almost makes an end of gardening altogether. I can enjoy the endless repetitions of scarlet and yellow and blue, and blue and yellow and scarlet at the Crystal Palace, Regent's Park, Kensington, and other places planned

especially for the excitements of holidays, but I get weary of it in private gardens, and I see plainly that their possessors barter away solid and substantial pleasures for a momentary glitter, which often disappoints them, and certainly leaves the ground a dreary blank during seven or eight months of the year. Of course, I know people have a right to do as they please, and, by the same rule, as I mean no offence, let me criticise freely, and avow my belief that the bedding system is carried to extrava-

practice of gardeners; they cram their houses full of geraniums and verbenas and have no room left for subjects that really demand skill to manage them, so that mowing grass, and the management of bedders are at last the beginning and end of their practice. But I have another objection, and first answer me this question: Does the whole pleasure of a garden consist in the spectacle of badly assorted colours during July, August, and September; say for instance, red and yellow in close proximity with dots



DIRLYTRA CUCULLARIA.

gant limits in nearly all the private gardens in the suburbs of the metropolis. But I shall give my reasons. In the first place, it generally disappoints its patrons, because they cannot proportion their colours, and with such taste, nor keep their beds in such perfect order as they see the planting in the great gardens. These results are owing to want of skill and want of labour; for the most part they copy each other, and, in the main, violate openly the very severe laws on which the bedding system is founded. Another evil is, that it circumscribes the

of white and blue thrown in by accident? You say "no," and you deny that your bedders are "badly assorted;" but you will admit this, that the tendency of the bedding system is to circumscribe the pleasures of the garden to mere colour and to a brief season—there, you have admitted quite enough. Now, you have in that set of beds somewhere about three thousand plants, and there are but ten distinct kinds in all! Now, suppose the three thousand plants were all different, ay, what would you think of that for an interesting

garden, something fresh every day—three thousand distinct forms, all sorts of shades of colour in flower and foliage, and three thousand stories to be told about the native place of each and in whose honour it was named, and its relationship to the rest of the vegetable kingdom. Now, to speak the plain truth, I'm an enthusiast about the bedding system, and that makes me touchy when I see it abused, or carried out too extravagantly for the size of the garden and the means of its proprietor. What pleasure is it to

bunch of wild poppies in those dingy borders where long neglect has marked out the contrast between the race after fashion and the steady walk in the way of comfort and knowledge, I should have a prettier dream than will visit me sometimes when I've stared at scarlet and yellow till my eyes ached, and all my senses of hearing and smelling and tasting were like so many eyes all bloodshot, with the blaze of geraniums and a blinding sun. Then, indeed, the only comfort was to wake up out of a nightmare of



THALICTRIUM ANEMONOIDES.

me, think you, to ask me to see your garden, when I turn my eyes from the beds to the borders and find you are like the King of Bonny, out at heels and elbows, yet decked with tinsel and feathers. I see plainly that all your strength is expended in furnishing those beds, and all the rest of your garden is as meagre and miserable as a leg of mutton on the fourth day of its coming to table. It is at such times I sigh within myself, "The friends of my youth, where are they?" and echo answers, "Where are they!"

If I were to catch sight of a little

mowing-machines, and peep down, in the gray dawn, to a little hollow, shelving and sloping down to a green dimple, and count a hundred species of grasses, all in knots and tufts and tassels; six-and-twenty species of dianthus, with their white and rose and ruby blossoms, sprinkled about them like favours of the fairies; a dozen arenarias; thirty campanulas, which seemed to jingle their bells as the cool breezes of the morning swept amongst them, as if it loved to kiss the edges of their cups that had taken the stain of the blue sky and the drift

of the untrod snow. Had I not these endless species of British geranium, some with blooms a thousand-fold more beautiful than all your scarlets, for what can surpass *striatum* in the pattern of its lines, like the threads of a spider's-web dyed by the sunbeams, and woven into kirtles for the good people that live in the honied shelter of the wild flowers? And as the day broadens, *Phœbus* shoots his fiery shafts athwart the thymy hillocks that begin to purple on the horizon yonder, and that I could smell the fragrance of in the heavy dew, when the dawn was in its first trembling—when the sun, I say, darts across the bronzy upland, a few horizontal streaks of gold, and russet, and purple, do I not get a view of the tall tufts of *Lythrum* and *Epilobium* that rustle gently in the dampest parts of the green dingle, where the land rises again into banks covered to the top with nature's darlings that I have brought home one by one, day by day, for years, until I am at the antipodes of my friend with his three thousand bedders; for here are three thousand species and varieties, each capable of telling me a tale of its original whereabouts and history, from the snapdragons yonder on the gray limestone, that whisper huskily of the dead past, to the pretty forget-me-not on the edge of the misty pool, that gives me some thoughts for the future. If you were to shut me up in a dark prison-house, where neither sunshine nor flowery odours, nor any of the comforts of life that God has added to the plain necessities of food and drink, were accessible, I should think of my banks and dells, my ferns, my grasses, my spring flowers, and my collections of hardy ericas, that are now blooming in pots in their own native soil, brought from the hills for their comfort and well being, and I could be happy in memory, though the victim of persecution for daring to utter a word against the follies of the bedding system.

Ah, friends of my youth, I have ye about me. Here, in this sunny autumn, I have in the wet loam, amongst grasses and ferns that love

the moisture, *Lythrum roseum*, *salicaria*, *tomentosum*, and *virgatum*, their purple spikes glowing like the rare colours of wondrous autumn sunsets. Close by are the willow herbs, *Epilobium angustissimum*, and *Dodonæ*, both delicate purple, and album, snowy white. The geraniums on the dry sunny banks are mostly in full beauty. *Albidum*, with tall clusters of white flowers, and *angulosum*, lovely blue, are just out of bloom; but *Lancastriense*, pretty tufts of dark green leaves and bluish flowers, *pratense pleno*, double blue, *retusum*, single blue, *striatum*, delicate striped, not elegant in foliage, but the flowers unsurpassed for delicate markings, and *Wallichianum*, red—these are in full beauty, and though the showiest of the race, I do not despise the smallest of the cranesbills, with their elegant leafage and little lilac and rosy flowers, like jewels set amongst them, and blushing too oft unseen. Here rises the tall spike of *Aconitum autumnale*, just showing its purple; there is the snowy *thyrsus* of *Achillea alpina*, white as the driven snow; *Anemone Japonica*, with its rosy purple blooms, is as gay as the best of your greenhouse exotics. The Asters are coming into their full splendour. *A. fulvis*, with its million copper-coloured blossoms, edged with white, and at nightfall like a pyramid of glittering silver, its darker hues being then lost, and its white intensified; *elegans*, again, pure white; *Nova Angliæ*, rosy purple; and *speciosa*, bluish purple, and fine spikes of flowers. I shall never have done if I attempt to carry you through the list, and I will not weary you, for I know you want to get out in the garden amongst the red, the yellow, the blue, the blue, the yellow, and the red. But what do you say about spring flowers? Do you mean to plant crocuses, snowdrops, and hyacinths? Well, plant a few of the pretty herbaceous pets as well. You know *Dielytra spectabilis*, the loveliest of the hardy herbaceous plants. Here is *Dielytra cucullaria*, with pretty white blossoms tipped with yellow. Do have it. You will never repent. Will you add also

D. eximia for its showy red blossoms, that begin in June and hold on till the end of August? Do you know the relatives of these, *Corydalis bulbosa*, *lutea*, *nobilis*, and *speciosa*—lovely plants, each worth a dozen geraniums, and rare indeed in these days of sameless repetitions? Once more remember the creamy and snowy flowers of *Thalictrum*. Here is *anemonoides*, the perfection of grace and purity, and one of the few gems that keep company with *Iberis sempervivum*, and the first blooms of *Alyssum saxatile* and *Aubrietia purpurea*. These four last-named plants are the best of all the spring flowers, and if we had the snowy *Iberis* only, we need not be dreary in the opening of the spring. If you were to see

my clumps of it on the fronts of rockeries, one mass of glittering white blossoms eighteen inches and two feet across, and the tufts as green all winter as the new-mown grass in May, you would grow it for your bedding work, and have miles of it if you had the room, and skill enough to nip off its green shoots now, and stick them in the open ground under bell-glasses to root in their own way, and make you strong plants without another moment's trouble. But I will not weary you more this time. Turn the matter over in your mind now that the bedders have the best of the argument *prima facie*, and I think you will be inclined to agree with

FIDO FIDES.

THE BEDDERS OF THE SEASON.

THE grandest display of bedders among the great gardens near London is, as usual, at the Crystal Palace. The Kensington Gardens is gay enough, but the confusion of flowers and polychrome beds—the first very bright, and the second very dull—is not in our view of the matter favourable to the spread of good taste or very creditable to the society. Mr. Eyles is so well known to be a master of floral compositions, and, as would be expected, there are here some fine examples of colouring, but there are so many glaring defects, that neither Mr. Eyles nor any one else can obviate, with such a plan to deal as Mr. Nesfield's, that the pleasure of surveying the bedding patterns is not to be enjoyed without alloy. The leading plants are Crystal Palace geranium, Brilliant, Cottage Maid, all the good old nosegays, and a few very bad new ones, *Calceolaria aurea floribunda*, *Tropæolum elegans*, and *Triomphe de Hyris*, Blue Lobelia, Purple King verbenas, and *Cerastium tomentosum*. If we were to attempt to describe the planting we should require much space, and without coloured plans the description would not be of much value. But it will be information to many that petunias are not used at all, and wisely so;

that there are some charming beds of the Phlox Drummondii Radowitz, the best tender annual we have for bedding, and that there is a new variety of *Atriplex* called *coccinea*, which has more red and less purple in its tone than the ordinary form of the purple orach. This variety is a selected seedling of the purple orach sent up from the country by a private gentleman, who does as all our readers ought to do, that is, he propagates only from the best types in a set of plants, so as to improve the race instead of allowing it to degenerate. Another novelty is Mr. Veitch's *Amaranthus melancholicus ruber*, which is at the disposal of the public at last, and here it makes two beds of very striking appearance in the two triangular patterns in the centre of the garden.

At the Crystal Palace the boldest style of planting ever devised is that on the main walk, which divides the terraces by a line parallel with the front of the palace. Here the oblong beds have three rows of Crystal Palace along the centre, two rows of Christine on each side, and a broad margin all round of *Tropæolum elegans*. The circular beds are of Purple King verbenas, and *Cerastium*. If you can picture a long line made

up of scarlet, rose, and orange-scarlet, broken at regular intervals by purple and silver; you will agree with us that the style is bold; if you have seen them for yourself you must certainly have a vivid recollection of their intense colouring. The sunk panels at each end of the upper terrace glow as usual in scarlet and yellow, the plants being *Christine*, *Cerise*, *Crystal Palace*, yellow *calceolaria*, and *Flower of the Day* edging. The chain pattern has variegated *Alyssum* for its main feature. The rosery is in a new style of planting in loops, and nothing could be more successful. There are some novelties and some novel combinations. The beds on the semicircle in the centre of the terrace, are edged with a new lobelia called *Paxtoniana*, large flowers in which white predominates, and with bright blue upper petals. This is a charming thing, and will be in demand whenever it is allowed to go into the hands of the trade. Foliage plants have been almost kicked out of the plans of Mr. Gordon this year. In the semicircle are two beds to correspond as a pair, one is planted with rows of *Perilla* and *Cineraria maritima*, and the result is the most melancholy picture ever seen in a flower bed. The match bed is the new *Coleus Verschaffelti* and the silvery *Cineraria*, and this is a beautiful combination; the *Coleus* having a rich warm crimson tone, so different to the blackish bronze of the *perilla*. You will, perhaps, remember that we said when *perilla* first appeared, that alone with any white leaved plant it had a funereal aspect. Go and see these beds, and say if the *dictum* was just. *Petunias* have been literally useless at the Crystal Palace this season, and fortunately they have not been largely planted. There is a poor bed of Shrubland rose in the semicircle, and a much poorer one of the double *petunia inimitabilis*, which has scarcely opened a good bloom the whole of this cold season. *Verbenas* have done well generally, and a new use has been made of the pretty alpine-looking *Imperatrice Eugenie*, namely, to carpet the ground of beds planted with Golden

Chain and other variegated *geraniums*, and the effect is rich and substantial. The best scarlet *geraniums* there are *Crystal Palace*, *Attraction*, *Brilliant*, and *Cottage Maid*. You will find a bed of *Attraction* on the outer ring of the rose mount, on the side towards the great basin, and if you do not know it, look for a plain leaved scarlet, one degree more robust in habit than *Tom Thumb*, and a mass of close trusses of the most clear and glowing scarlet, say just twice as good as the best bed of *Tom Thumb* you ever saw. Close by is a bed of *Brilliant*, deeper in tone and inexpressibly rich.

Reporting from home I make mention again of the *Lobelia Kermesina*, sent out by Messrs. Carter this season, and referred to in May last. I put out a rooted inch off it the first week of May among my trial plants on a bank. It grew like the best of the *speciosa* strain, close and tufty, soon began to bloom, and looked poor, the blossoms then were pale lilac. By the second week in June it had spread into a tuft four inches over, was smothered with blossom of a lively purple crimson, and since that date it has grown and bloomed even more freely than the best of the blue *lobelias* used for edgings, remarkably close and neat in habit, and altogether novel in its appearance. On this 23rd of August it is in full splendour, the tuft a foot across, and the colour apparently a shade richer than during the month of June, probably owing to the more liberal sunshine it has had of late. If I had to bed largely, either for my own pleasure or to gratify an employer, I would have a tolerable good line from that same plant next year, and thereby create a sensation. Manage by all means to see it, even if you buy a plant this season, that you may make up your mind whether to use it next year, and in what sort of combinations. I imagine it would tell well in front of dwarf *calceolarias*, or better, perhaps, if mixed plant for plant with the ordinary form of *L. speciosa*, or the darker blue of *ramosoides*.

Another of my novelties is *tropeolum Crystal Palace Gem*; and a

gem it is of the first water; say *Triomphe de Hyris* with two shades of colour removed, so as to tone down the yellow to pale straw, and the spots to brownish buff, but the habit is like the *Tom Thumb* race of *tropæolum*, and it forms a round close tuft like a daisy, and is all over flowers; a most delicate and cheerful bedding plant, requiring no stopping or trimming or removal of leaves to show the blooms. Now I come to something extra choice. Mr. Veitch sent me a pair of his new *Mimulus cupreus* this season for trial. I let them flower in their starving thumb pots, then turned them out on the same bank as the rest, and there they have done wonders. The plant is the dwarfest and neatest of all the species of *mimulus*, and it makes a close-growing tuft as large as your hand, and throws out from every joint blossoms of the true *mimulus* type, each the size of a shilling, and the colour—not *cupreus*, no, that is not the word, but the colour of burnished copper, held in the light of a red flame, or with one shade of red washed over the proper hue of the copper. This lovely plant has kept company all the season with that wretched thing *Agatheacelestis* var., which I warned our readers not to speculate in too boldly, and now advise them not to touch at all if they have abstained hitherto, and to throw away if they have it. The old Cape aster was worth keeping, but this variety has forgotten how to bloom in donning a new leafage, and neither for its variegation or its flowers is it worth a place in any garden. Not so *Scrophularia nodosa variegata* (or *S. aquatica* var.) sent out by Mr. Williams, of Seven Sisters Road, Hornsey; there you have a first-class subject for edgings, which anybody can keep and propagate; it makes a charming front line of creamy white foliage.

I was astonished at the Crystal Palace to see how beautiful an appearance *Coleus Verschaffelti* made. If it proves so good in a bad season, we may consider it well proven as a bedder, but it must not be put out early. Let me, while the matter is in mind, adduce a few particulars on this point. In the same trial beds in my

garden as I have just referred to, this *Coleus* and the new *Amaranthus* are planted very near each other, and both under similar conditions. The *Coleus* was put out the second week in May, it soon became almost as black as ink, has looked miserable ever since, but is now making a few shoots and beginning to show its proper colour. With this then I fail, and at the Crystal Palace it proves eminently successful. But, on the other hand, my plants of *Amaranthus melancholicus ruber* have grown freely from the first, and have all the season long been many shades better than those in the Kensington Gardens. So in this matter I beat the Royal Horticultural Society. In the use of the *Coleus* it is evident I planted out too soon, and as the weather was extra hot at the time, the plants were removed direct from a warm house to the open ground, and the shock was too great for them. With the *Amaranthus* the case was reversed. Mr. Eyles received the plants from Messrs. Veitch, and planted them out forthwith without hardening, and they actually had to patch the beds with plants of *Atriplex*. But I bestowed upon it extra care, took cuttings first from the two plants received from Mr. Veitch, obtained thereby some reserve plants, and hardened the two originals carefully before they were turned out. The conclusions scarcely need to be indicated; tender plants must be carefully hardened, and it will always be a gain in the end to wait for suitable weather, than to risk occasioning a shock from which they may never recover. It is clear from the points so far established that the materials for foliage colouring are considerably increased by the novelties proved this season. Now let us turn to the subjects more generally used and understood. The two new silvery edging plants are of first-rate excellence. *Gnaphalium lanatum*, almost as white as *Centaurea candidissima*, which you know is the whitest plant known, is a free-growing plant, throwing out numerous branches near the ground, and as easily propagated as anything we have in our gardens, but rather difficult to keep. Pot it in very poor sandy stuff, and

keep it in a warm house all winter until you are used to it; then perhaps you will be able to winter it in a pit. One of my plants of it, struck in May last, and left to grow as it pleases to show its habit, covers two square feet of surface on the front of a rockery, so you may be sure it will want pinching in. I have *Centaurea candidissima* and *Cineraria maritima* in close proximity, and though the first is as white as a miller and a lovely thing, the second beats it for beauty as a specimen. But then I keep old plants of the cineraria till they have stems as thick as walkingsticks, treating the same as geraniums as to potting for winter, pruning in, and finally plant them out in a mixture of grit, leaf-mould, charcoal, and chalk, and I never yet saw any plants to equal mine in the massive heads they make of glittering frosted silver foliage. Whenever this plant flowers the seed should be saved, to get up a stock of seedlings for silver edgings, or for foliage beds, with *Coleus Verschaffelti*. *Cerastium Biebersteinii* proves to be a better plant than *tomentosum*—more woolly, more lustrous, and more like frosted silver. But it requires no care to keep it; and I find the best way to use it as an edging is to leave a few tufts in the ground all winter; and in April clip off the shoots with a pair of scissors, and plant them, without roots, where they are to remain, two inches apart. I use the variegated mint, golden mint, *Antennaria margaritacea*, variegated arabis, and *Stachys lanata* the same way, and that makes an end of the use of pots, glass, bottom-heat, and all other troubles for these plants, and the result is better in the end, for the growth is close, dwarf, and with less green in such things as the mint, as when we put more strength into them by good composts and careful nursing. I heard a gardener declare the other day that it would be impossible to do a bed in blue lobelia for the mass and Flower of the Day geranium for a margin; but I told him at once how to do it, without any fear of the geranium overtopping the lobelia. I said, get your lobelias

forward as usual, and plant them out. On the 1st of June take your old plants of Flower of the Day, and cut them up into a sufficient number of three-inch cuttings, old and young wood alike, but old preferable, if enough of it; dibble these in for the edging, one inch or more deep, and four inches apart. The task is then accomplished—not one will be lost; and if towards the end of the season any begin to get too high, stop them back. As for the old plants from which the cuttings are taken, let them break in a warm house, then harden them, and they will be soon in right condition for a bed to be edged with lobelia, the very reverse of the first proposition.

I have been trying all the yellow-leaved geraniums, and I come to the conclusion that Golden Chain is still the best of all. The new ones of this class, instead of being distinctly variegated, have instead, the appearance of green-leaved geraniums that have turned yellow through bad treatment. Such to me is certainly the appearance of Gold Leaf and Golden Fleece. I would not give sixpence for a cart-load of either; but Cloth of Gold grows freely, is more golden in hue, and has the genuine appearance of a variegata. Let me now enumerate a few of my favourites, which I consider every reader of the FLORAL WORLD ought to possess, not because they are my favourites, but because they are among the most useful of decorative plants. Variegated-leaved Daisy for beds, and borders, and pots in spring; *Centaurea argentea*, *candidissima*, and *gymnocarpa*, for rock-work and ribbon lines; *Cerastium Biebersteinii*, better than our old friend *tomentosum*; *Gnaphalium lanatum*, described above; *Arctotis grandiflora* to treat as a biennial, to supersede *Gazania splendens*, which closes its blossoms so early in the day; *Oenothera Fraserii*, the best hardy yellow-flowering herbaceous border plant in existence; the next best is *Lysimachia thyrsiflora*, Magpie, and *Trentham Blue* pansies; double white *Pyrethrum*, the best white flowering bedder, to be kept on from spring cuttings; *tropæolum Lily*

Schmidt, deep scarlet; Gauntlet, deep orange and red blotches; Crystal Palace Gem, very dwarf and close, and the most profuse blooming of all, pale straw with blotches; Elegans, double orange, and Triomphe de Hyris, Verbena Melindres, almost lost, and lately re-established. Plants of this verbena should be potted now into 48-sized pots, wintered in the greenhouse, and propagated in spring from cuttings. *Coleus Verschaffelti*, this will make fine plants from cuttings in May and June. I have some in the greenhouse struck in June in a cucumber frame, and they have been ornamental from the first. *Tussilago farfara variegata*, the variegated coltsfoot, quite hardy, increases rapidly, and if grown in poor soil makes a grand line of gold yellow foliage, the very colour we are most in need of; it is more useful for out-door work than *Farfugium grande*. *Fuchsia Meteor* makes a superb bed, or a fine plant for a bank of fine foliage subjects. The flowers are worthless; but the richness of the foliage more

than makes amends, and it has a better colour out of doors than under glass. Every leader must be trained up on a stick, or it will spread about like Clapton Hero, which it closely resembles in habit. Of fuchsias generally I have yet to report, as also of roses, and I shall not forget them. Geraniums Alma, Bijou, Attraction (variegated). Attraction (green leaf), Brilliant, Flower of the Day, Cloth of Gold, Golden Chain, Golden Ivy Leaf, Lady Plymouth, Mrs. Pollock, Christine, Crystal Palace, Rose Queen, Lady Middleton, Trentham Rose, Aurora, Boule de Feu, Cottage Maid, Madame Vaucher, the best white (but no whites are good), Rubens, Crimson Perfection, Purple Nosegay, Mrs. Vernon Nosegay, Imperial Crimson Nosegay, *Denticulatum*, to cut for bouquets. If you lack any one of these, you are in arrears of the fashion, and of the desire of the FLORAL WORLD to increase the number of your enjoyments.

SHIRLEY HIBBERD.

SALVIA PATENS.

THE *Salvia* is a very large, and at the same time an extremely natural genus; for a striking family likeness, if we may so speak, is to be found throughout the whole of it. Loudon enumerates nearly 100 species; a great many of which we know to be highly ornamental, either as conservatory or border plants. *S. patens*, of which we intend to speak more particularly, is certainly the finest of the whole genus; its noble and brilliant blooms forming such an admirable contrast with those of *S. splendens* or *S. fulgens*, when planted in groups, and which we are of opinion is by far the best manner of planting these and many other kinds of plants. We have had the above mentioned species with the addition of *S. odorata*, which is white, and *aurea* (yellow), in the centre of a bed; and the dwarf species, *Tenorii* (blue), *pinnata* (pink), and the little *Ægyptiaca* (white), round the border of the

bed; and the whole formed one of the most brilliant masses it is possible to conceive. We have great pleasure in making it known to our readers, that *S. patens* we have found to be perfectly hardy, and take some credit to ourselves for the originality of the remark. We learnt this from a plant which was by accident left out of doors in a pot among some others the whole of last winter; on examining the pot in the spring some signs of vegetation were visible; it was then repotted, and the usual care bestowed on it; the result has been three beautiful spikes of flowers. This proves it must be tolerably hardy, for the spot on which it stood was very much exposed.

Another, and the safest method of keeping it through the winter is this: as soon as the plant has done blooming, gradually withdraw its supply of water until the foliage falls off; then take it out of the pot, cut the stem

down to within about an inch of the tubers, then hang it up in a dry place secure from frost; here it will keep extremely well till wanted again, when it may be either started in a gentle bottom-heat in March, and afterwards taken into the conservatory, or it may remain in the dry state till May, and then be planted in the open border.

The *salvia*, treated as a greenhouse plant, requires a mixture of peat and loam in equal parts, with small but frequent shiftings. But

when forced, which it will bear very well, it should be potted in peat alone; this gives a deeper green to the foliage, and a much greater brilliancy and depth of colour to the flowers.

In conclusion, we may mention, it derives its name from *Salvere*, "to save," in allusion to its supposed healing properties.

It belongs to the natural order *Labiata*; and in the Linnæan arrangement, it is placed in class *Diandria*, order *Monogynia*. R. P.

SEPTEMBER, 1862.—30 DAYS.

PHASES OF THE MOON.—First Quarter, 1st, 10h. 17m. morn.; Full, 8th, 7h. 57m. morn.; Last Quarter, 16th, 4h. 22m. morn.; New, 23rd, 8h. 57m. after.; First Quarter, 30th, 4h. 9m. after.

D M	Sun rises.	Sun sets.	Weather near London, 1861.						Rain.	THE COUNTRY.	
			BAROMETER.		THERMOMETER.					Rural Sights and Sounds.	
			Mx.	Min.	Mx.	Mn.	Me.				
	h. m.	h. m.									
1	5 13	6 45	30·061	29·898	83	42	62·5	·00	Lichens abundant		
2	5 15	6 43	29·932	29·846	80	53	66·5	·01	Hawkweeds on dry banks		
3	5 17	6 41	29·775	29·736	73	47	60·0	·06	Flies swarm		
4	5 19	6 39	29·931	29·860	74	44	59·0	·00	Navelwort flowers		
5	5 20	6 37	30·006	29·825	78	59	68·5	·00	Cudweed flowers		
6	5 21	6 34	29·785	29·676	74	56	65·0	·12	Dragon-flies lay		
7	5 23	6 32	29·797	29·838	71	47	59·0	·00	Gracefoot in coppices		
8	5 25	6 30	30·038	29·887	69	37	53·0	·18	Autumnal foliage very beau-		
9	5 26	6 27	29·896	29·860	73	41	57·0	·00	tiful		
10	5 28	6 25	29·906	29·846	73	33	53·0	·00	Docks in flower		
11	5 30	6 23	29·928	29·887	72	34	53·0	·00	Michaelmas daisy		
12	5 31	6 20	29·080	30·053	75	40	57·5	·00	After grass beautifully green		
13	5 33	6 18	30·049	29·776	66	47	56·5	·06	Crustaceous animals spawn;		
14	5 34	6 16	29·710	29·649	64	41	52·5	·02	Drone-fly begins to lay		
15	5 36	6 14	29·721	29·697	65	46	55·5	·02	Tall hemp agrimony		
16	5 37	6 11	29·995	29·870	60	36	48·0	·00	Sea-wormwood flowers		
17	5 39	6 9	30·110	30·087	66	35	50·5	·00	Young partridges run		
18	5 41	6 7	30·173	30·078	71	34	52·5	·00	Fungi in damp places		
19	5 43	6 4	30·152	29·950	72	41	56·5	·02	Mosses increase		
20	5 44	6 2	29·793	29·781	67	34	50·5	·00	Blue-throated redstart		
21	5 45	6 0	29·778	29·510	63	46	54·5	·18	Lichens increase in beauty		
22	5 47	5 57	29·514	29·424	64	50	57·0	·25	Departure of many summer-		
23	5 49	5 55	29·386	29·310	67	43	55·0	·01	birds		
24	5 50	5 53	29·421	29·299	66	35	50·5	·49	Ivy in flower		
25	5 51	5 51	29·269	29·190	61	39	50·0	·19	Virginian creeper begins to		
26	5 53	5 48	29·792	29·568	63	32	47·5	·00	colour		
27	5 55	5 46	29·921	29·858	67	35	51·0	·00	Sparrows return from the		
28	5 57	5 44	29·840	29·764	62	49	55·5	·17	stubble		
29	5 58	5 42	29·894	29·786	71	40	55·5	·00	Night frosts to be expected		
30	6 0	5 39	29·882	29·731	78	45	61·5	·00	Thrush sings		

NOTES FOR THE GARDEN.

KITCHEN GARDEN.—Fetch up all arrears while the ground is warm and moist, and especially see that winter greens are fairly dealt with. Many of the small plants left in seed-beds will now pay for good places, and the clearing away of peas, potatoes, etc., will make room for them. Good stumps of summer cabbage should be planted close together to furnish sprouts. Earth up celery. Prick out cauliflowers into patches four inches apart, to be covered with hand-lights. Take up potatoes, carrots, and beetroot as wanted. Parsnips may be taken up and stored if the plot is wanted for winter greens. Draw onions and lay in the sun to harden.

FLOWER GARDEN.—All border plants of questionable hardiness, or that are of high value, should be taken up and potted, to keep over winter in frames. Pot off rooted layers of carnations and picotees,

and rooted offsets of auriculas. Propagate bedding plants, and get struck cuttings into small pots. Calceolarias should be struck in shallow pans, to be kept in the pans till early spring. House tender plants, and give plenty of air. Sow hardy annuals on firm ground, to stand the winter, for early bloom next season. Gather seeds of all kinds as soon as ripe. Plant hyacinths, tulips, narcissi, crocuses, snowdrops, and daffodils, as soon as the bulbs are obtained.

GREENHOUSE AND STOVE.—Hardwooded plants require to be well ripened before housing. Give plenty of light and air to cinerarias and primulas. Pines want a humid atmosphere, full sunlight, and plenty of manure-water. Shade grapes intended to hang any length of time. Vines disposed to break, encourage with a temperature of 55° to 60°; for pines in growth, 84°.

~~~~~

## TO CORRESPONDENTS.

**A BED OF ORNAMENTAL SHRUBS.**—I have a centre bed (one of three), oval, 15 ft. by 11 ft. I have seven good broad striped golden hollies ready to move, and three dozen *Skimmia Japonica* in pots well berried. I have seen a bed planted with these, and edged with *Erica herbacea*; but as I am only three miles from London Bridge, I fear the ericas will not thrive; if you think so, will you kindly propose another edging plant. The soil is a good loam, but I shall put in a load of peat for the *Skimmias*. Between the hollies I shall plant *Lilium lancifolium* in varieties alternately with the common white lily. Between the *Skimmias* and next row *Rex rubrorum* and *La Candeur* alternately in one line. Outside the permanent edging plant I shall place crocus, but most unfortunately mine, although good strong corns, are mixed. Your opinion and advice will be appreciated by H. [This is the sort of bed we have often advised, and we see it in our mind's eye beautiful all the winter, with the myriad berries of the *Skimmias* and the hollies, very gay in March with the crocuses, brighter still in April with *Erica herbacea*, which will do well at less than three miles from London in good peat, and in autumn another change in the lovely blossoms of the lilioms. Plant the ericas without fear; there is nothing else in that style so safe. For the cro-

cuses get a supply of cocoa-nut refuse, make up a narrow bed for them between lengths of rough boarding or bricks on edge, and plant them in it. When they bloom, part and sort them, and plant in their places directly as you wish them to remain for years to come. That is the way to manage mixed crocuses; they lift in full bloom as safely as pom-pone chrysanthemums, and with as good roots. You ought to have clumps of *Sisyrinchium anceps* between the ericas all round, to make low tufts of blue in front of the lilies when they are in bloom.

### **BERBERIS JAPONICA; MOWING MACHINES.**

—*W. R.*—*Berberis Japonica* will grow in company with any of our hardy evergreen shrubs. It would be a handsome thing anywhere, even in a poor soil and an exposed situation, because quite hardy, and not over particular as to soil. But as its great leaves are apt to be injured by storms, and as those leaves grow to double the dimensions in a rich sandy moist soil to what they attain in a poor soil, we prescribe for it shelter, shade, and a prepared compost. Turf from a sandy roadside chopped up with rotten dung will grow it to perfection. As to lawn mowers, we certainly have our likes and dislikes. Samuelson's machine, with Boyd's brush, gave us such satisfaction that we never wished for any other till we had some fancy

work which it was hardly fit for, and then we took to a 12-inch chain machine of Green's, which has done its duty well; it is in fact a beautiful piece of mechanism. A lad in our service uses this constantly with great skill, and we find it quite large enough for a small lawn of about six rods, in which there are intricacies in which a large machine would not touch. Where there are shrubs and flowers on the borders of a small lawn, Green's small machine will do the work beautifully; but for a large open piece, we should prefer our old friend Samuelson's 16 or 20-inch. Unless the lawn is very flat, a 20-inch would require two to work it, but one man can work a 16-inch up a moderate incline. We are bound to add that we have used Kerman's, Ferrabee's, and Shanks's, and they are *all good*.

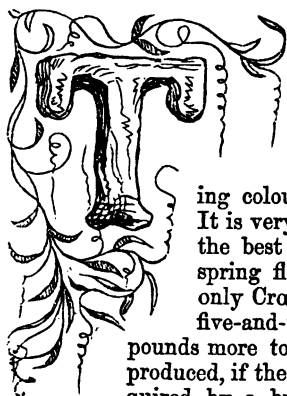
**FOLIAGE LINES.**—*B. A.*—You will probably not find *Antennaria margaritacea* in any catalogue. We know of only one nursery where it is to be found, and that we ourselves supplied with it. We shall have pleasure in sending you a small tuft to propagate; you know it is our rule never to give away anything that can be obtained in the regular way; it would be unfair to the trade. The ribbon is *Phalaris* 15 inches, *Chenopodium atriplicis* 15 inches, *Antennaria* 12 inches, *Perilla* and *Atriplex hortensis* rubra, plant and plant mixed, for front row 9 inches. The *Atriplex* in this row has to be nipped back all the summer to keep it down. We do not recommend you to follow this planting. Throw out the *Chenopodium*, and in that row plant the *Atriplex*, and in the front row *Perilla* only. Our reason for making the change is that the celery-fly attacked our *Chenopodium*, and of course may do so again; but another reason is that it is not sufficiently strong in colour to balance the *Perilla*; but the other is, and makes a good repeat of a dark line to correspond with the front line. Carry out the scheme as now amended, and you will have a grand border in quite a new style, and no one will find fault that it is destitute of flowers. When you get the *Antennaria*, pot the roots in 5-inch pots, using poor sandy soil. If you plant it out it may be lost, though it is one of the hardiest of plants. As soon as it starts in spring, propagate from cuttings with or without heat; it roots rather slowly, and never makes much fibre. We did not find any insects in the box.

**VARIOUS.**—*Omicron.*—Your peach trees are infested with the red spider, the result of insufficient moisture at the roots when they were in full growth, or too hot and too dry in atmosphere. You cannot do anything now but let the leaves fall, and get the wood as well ripened as possible. Sweep up the leaves and burn them, and next season syringe the trees from the first day the buds begin to swell to the time the fruit begins to colour, except while the bloom is setting, when they must be rather dry with free ventilation. Manuring the border in January will do something to prevent it next year. The *crassulas* must be left alone now. Next May pinch out the tops, or boldly cut them back according to size and habit, and keep rather dry until they begin to break from the lower part of the stems.—*L. S. M.*—*Calceolarias* have left off dying suddenly in London; this year they have grown and bloomed superbly. Your soil is probably too hot and dry; they require a soil rich in leaf-mould and rotten manure to do well, and the plants to be from cuttings struck in autumn. Spring-struck plants are the most given to this sudden disappearance.—*Constant Reader.*—It is an expenditure of force to allow the flower stems of asparagus to ripen their seed. We always snap the flower stems through near the root, and leave them till they perish, and then cut them clean away. You will find at page 224 of the volume for 1859 full directions for the culture of the asparagus.—*S. H.*—As you have no flue, no gas, and no convenience for hot water, we advise you to get Musgrave's slow combustion stove, the smallest size made costing £4 10s. This will not burn you out, because you can regulate the heat, and it will do much more than keep the frost out. If you adopt this, be sure to attach three lengths of three or four inch glazed drain pipe, with iron mushroom top for chimney.—*G. A. Clarke.*—Any of the nurserymen who advertise in this work can supply *Malva capensis*; it is not at all a scarce plant.—*E. Motley.*—Here is a receipt for you worth a guinea; in any other work it would be displayed in large type, and made the most of. Cut up a few windfall apples, put the slices under flower pots in the frames and pits infested with slugs and wood lice, and every morning lift them up and kill the trapped vermin. Slices of boiled potato will do, or little heaps of brewers' grains.

# THE FLORAL WORLD

## AND GARDEN GUIDE.

OCTOBER, 1862.



THE four classes of bulbs on which we must depend for the principal effects out of doors are the crocus, snowdrop, tulip, and hyacinth. Where required to be used in large quantities these may be had in distinct and striking

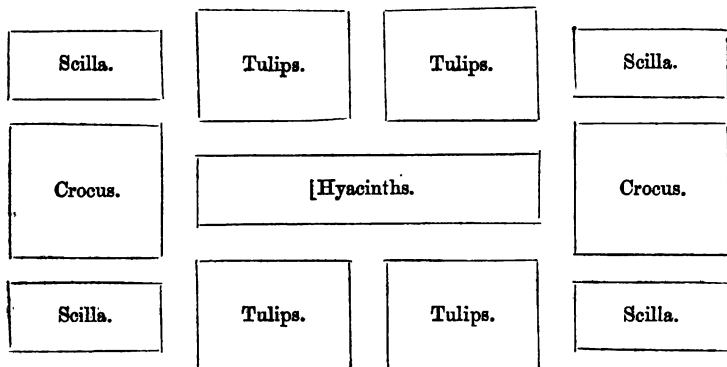
colours, and of good quality, at very cheap rates. It is very important for people who really wish to do the best with their gardens, to know that a show of spring flowers does not necessitate an outlay such as only Cræsus could afford; for though we may spend five-and-twenty pounds upon a single tulip, and five

pounds more to grow it properly, as good an effect may be produced, if the embellishment of the garden is all that is required, by a bulb costing one penny, and an additional farthing for the expense of cultivation, inclusive of labour,

manure, and rent. While visiting gardens during the present season, we have many times thought how dreary will be the aspect from November to June, as compared with their grand summer costume, for the bedding system has thrust out of the way many of the most useful spring flowers of the herbaceous class, and there is a popular dread of bulbs for use on a large scale as ruinously expensive.

There is also another difficulty, and that is, that gardeners wish to deal with them as with summer bedders. The latter they dispose so that all shall be in bloom at the same time, and they want to do the same with a collection of bulbs, but Nature is against them. As they cannot be made to bloom simultaneously, crocuses, hyacinths, tulips, altogether, groups of beds geometrically disposed are too often left in a state of fallow, and one half the year is wasted as to flowers through the entertainment of a false notion. It is a very easy matter indeed to plant the several sorts of bulbs so that their blooming at different times is a positive advantage, whether in continuous borders or in beds that constitute groups all under the eye at the same time. For instance, in every set of beds, say, for instance, on a lawn within view of the drawing-room windows, all the beds that correspond with each other in the pattern can be planted with same

kinds of bulbs, so that when these are in bloom there will be the same harmony of arrangement as if the beds were in bloom throughout. A simple scheme will make this plain : suppose a set of eleven angular beds on a lawn as here represented, the gardener's object may be to have several kinds of bulbs in bloom all at the same time, and that is just the very thing that cannot be accomplished. But for months together there may be abundance of flowers in rich masses, without any lop-sided anomalies, as the planting of the beds will show :—



It will be seen that it matters not whether the crocuses, tulips, hyacinths, or scillas, bloom altogether or in succession, each separate class will be in bloom in its own season, and yellow crocus on one side will have a match in yellow crocus on the other, and the same with all the rest. But this simple scheme may be improved by using all the smaller bulbs as edgings to the larger beds. Suppose them all edged with snowdrops, then early in the year the whole scheme will be gay with white flowers. Next the snowdrops plant crocuses, and as the snowdrops go out of bloom these will succeed them; then as the crocuses decline, the hyacinths and tulips, forming the principal masses, will come to their full splendour, and the season of spring flowers will be prolonged almost to the time for turning out summer bedders. We should expect the gardener to fill up the *hiatus* with clumps of *Aubrietia*, *Iberis sempervirens*, *Alyssum saxatile*, double daisies, etc., and at the proper time the bed should be cleared of these and the bulbs together, for the customary summer planting.

We have said that the supposed expensiveness of bulbs for out-door work deters people from using them largely, which is a fallacy. We shall presently show that they are by no means so costly as supposed. But there is another impediment, and that is the supposition that the soil must be prepared in some mysterious manner with elaborate composts, and processes which few understand. Now the simple truth is, that for all the bulbs commonly used for masses in the flower garden, the only preparation necessary is to break up the ground well and manure it moderately, leave it a few days to settle, and then plant the bulbs. If the soil is wet it must be drained; but that is necessary for everything else cultivated in it. Scarcely anything worth having will grow in ground where the drainage is not either naturally or artificially sufficient to remove



surplus water quickly, so that the soil is never more than reasonably moist. All the bulbous-rooted plants like a rich sandy soil, and the more leaf-mould, sandy road drift, turf, and old dung, that can be worked into a well-drained loam the better for them, but there is no occasion for composts, and all tedious operations are unnecessary.

Now as to the cost. All the best bedding tulips, such as *Pottebakker*, *Rex Rubrorum*, *Tournesol*, *Yellow Rose*, and *Duc Van Tholl*, are to be had at from five shillings to nine shillings per hundred; and the most expensive kinds, such as *Vermillion Brilliant*, *Imperator Rubrorum*, *Morgen Zon*, etc., which are dazzling in their effect in clumps and masses, will never cost more than four shillings per dozen. A reference to any of the bulb catalogues will show that if good colours are the desiderata without reference to the peculiar excellence of varieties delicately striped or finely formed, a few pounds will go a long way to make the garden an agreeable attachment to the house during the early months of the year, instead of, as it too often is at that season, a dreary wilderness. As we offered some remarks on this subject in our last, we may now go a step further, and consider a few points of interest as to the planting of beds and borders.

In all the bulb catalogues "mixtures" are advertised at a cheap rate. When these mixtures are in *distinct colours* they may be very useful for those who are obliged to make the most of a small outlay. But mixtures of colours are to our thinking abominable. If we were to plant a set of beds like those in the scheme above, we would have the edgings of snowdrops all through. The two crocus beds we would also edge, by planting yellow crocus inside the line of the snowdrops; all the rest of the beds we should make the second line of blue crocus. The two crocus beds we should plant with blue crocus for the mass, and when in bloom they would make two fine blocks of blue edged with yellow; the rest of the beds being then gay with their blue edgings, and the hyacinths and tulips not yet out. The four corner beds we should plant solid with *Scilla siberica*, or if those were thought too dear at ten shillings per hundred, and for beauty they are worth their weight in gold, we would be content with *Scilla campanulata*, at about four shillings per hundred, a far inferior, but still a useful kind for clumps and masses. The four tulip beds should be of four kinds only, the bulbs five inches apart all over, two shades of white and two shades of red, or two shades of lilac, and two of yellow, and the hyacinths all of one sort, thus:—

Cottage Maid

(lilac).

Pottebakker

(yellow).

Hyacinth Jenny Lind

(carmine).

Canary Bird

(yellow).

Grisdelin aimable

(lilac).

If the tulips were white and red, as white Pottebakker and Vermilion Brilliant, or two shades each of white and red Van Tholl, then the grandest planting for the bed of hyacinths would be Baron Fitzallan, which has always given us finer spikes of rich blue out of doors than any other hyacinth we have grown that way. If the grower prefers variety, that there may be some interest in the examination of the beds, then the best way is to follow the old practice and plant distinct kinds in rows; the tulips five inches, and the hyacinths eight inches apart every way; the composite style of planting could be carried out on this plan by having all the rows in one bed different shades of the same colour. Thus groups of tulips to produce effects resulting from the predominant colours of each group, could be formed by such selections as these:—*White*.—Pottebakker, Queen Victoria, Reine Blanche, Cour de France, feathered with cerise crimson; Standard Royal, striped cerise crimson; Grootmeester, flaked cerise crimson. *Yellow*.—Pottebakker, Canary Bird, Golden Prince, Persicum, pure yellow; Thomas Moore, buff orange; Grand Duc, gold, crimson inner band. *Scarlet*.—Vermillion Brilliant, a dazzling colour; Van Tholl, Feu d'Anvers, Cramoisie fidele. *Crimson*.—Gesneriana, crimson scarlet, two varieties, one with black and another with purple base, both grand and rather late; Couronne pourpre, blood crimson; Zongloed, vivid crimson; Royal Queen, pure crimson, green and yellow base. *Rose*.—Monument, crimson rose, streaked white; Proserpine, rose tinted salmon. *Lilac*.—Grisdelin aimable, bluish lilac; Cottage Maid, light rose or blush, white ground, a near approach to lilac; Archus, violet purple, shading into lilac; Lac Obscur, violet crimson, peach lilac belt. If a proportion of double tulips were preferred, we should use the following either to combine with singles, or for separate groups, the latter plan would be the best. *White*.—Belle Alliance, feathered with violet crimson; La Candeur, clear white, good shape; Pourpre agreable, cream white, flaked violet purple; Couronne des Roses, cream white, flushed rose. *Yellow*.—Admiral Kingsbergen, Arlequin, Gloria Mundi, feathered brown crimson; Grenadier, gold yellow, feather brown crimson; Pæony, gold feather brown crimson; Zwinglius, flaked brown crimson; Yellow rose, gold yellow, superb. *Scarlet*.—Rex Rubrorum, very showy; Tournesol, scarlet and yellow. *Crimson*.—Couronne pourpre; Imperator; Rubrorum, crimson scarlet; Rose eclatante; Velvet Gem, bronze crimson. *Dark*.—Bonaparte, chocolate; Lord Wellington, purple lilae; Moliere, purple, large.

The same principles which govern the use of bulbs in solid masses in beds, apply to their use in borders. Here they can be used in close lines as ribbons, or in distinct clumps, and we think the clump system the best; as it is also the most economical. Compare a line of snowdrops or crocuses with a set of clumps, and the latter will always be pronounced the best disposition of them. As the different kinds of bulbs bloom at different periods, there will be the same succession as in beds, and the places for each will be determined by height only—say for front line clumps of snowdrops and *Scilla siberica*, nine inches apart all through; behind that front row clumps of yellow crocus; behind that again, clumps of blue and white crocus, not mixed, but distinct and alternating; then hyacinths, and for the back row early tulips.

With the exception of hyacinths, all the bulbs we have named will increase in value every year if planted in a sound, well-drained, well-manured soil, and the more sandy the soil the better. They should be

planted before they have grown much, and be taken up when the foliage is decaying, and be laid in some shady place covered with a little mould to ripen before being stored. Crocuses and snowdrops need not be removed every year, but once in three years. They should be taken up, the ground should then be trenched and manured, and the bulbs planted again. Borders appropriated to a display of these in spring may be sown over with annuals without injury to the bulbs, and to render a yearly lifting of them unnecessary. As to hyacinths, we have shown in former papers how they are to be treated to maintain and increase the stock; and unless dealt with as we have advised, they will need to be renewed every year. One more remark may be worth making, it is that all the most prized bulbous and tuberous rooted plants, except anemones and ranunculuses, thrive amazingly well in the smoky atmosphere of great towns. To tulips, hyacinths, crocuses, scillas, snowdrops, may be added Irises, *Allium azureum* and *Allium moly*, *Fritillarias*, *Hemerocallis flava*, Winter Aconites, Tritomas, Tritonias, *Ornithogalums*, and lastly, the lovely Japanese lilies; but we must halt here for we shall get too far away from the flowers of the early months, which our friends must think of now in earnest if they hope to be happy when the gloom of winter once more changes to the gold of spring.

---

#### FERNERIES AND FERN-HOUSES.

ONE of our fern-growing friends, who has as fine a collection as any to be found in the county of Middlesex, writes to us to say that the selections of stove and greenhouse ferns that have been published in the *FLORAL WORLD* have been of more real value to him and his gardener than all the costly fern books and all the trade catalogues put together. "Having perfect confidence in your judgment," says he, "I look over those lists, and note which of the selected species have not yet been added to my collection. I write at once to Mr. Sim, or some other house known for sending out ferns true to name, and at once secure the desiderata, and in every case I consider I have been greatly the gainer by the hints afforded me of the kinds most distinct in habit and character." There is real pleasure in receiving testimony of this kind that one's labour is not thrown away, for to make good lists is as difficult a task as any in horticultural literature, and especial pains have been bestowed upon our lists of ferns. What we have now to say will be mere nonsense to the subscriber whom we have cited above, and perhaps to all the rest of the fortunate people who can grow *Platyceriums* by the score, and put a dozen plants of *Cyathea medullaris* side by side, all ranging ten or twelve feet high, and call them the weeds of the fernery. These notes are for people who are not made of money, and who grow ferns for the pleasure of growing them, and for something beautiful to refresh the eye at all seasons, without plunging in *medias res* into the science of Pteridology. I must tell you what you know already, that I live in the midst of ferns, my better half is a better hand in managing some of them than I am, and she completely eclipses my performances in the garden and the greenhouse by her splendid collections in pots and Wardian cases. Coming direct to business, for a fact and a principle, PICKARD'S PATENT PLANT CASE is the best form of

in-dear fernery yet devised. Whoever wishes for such an enjoyment as I have, should follow my example, and that is to furnish the two windows of the bedroom with a pair of these cases, and stock them with greenhouse ferns. The figure of the fern case in the June number (p. 129), will show that the contrivance admits of a maximum of daylight and air, and an uninterrupted view of the contents. Herein is the principle on which all fern cases should be constructed, a principle I have not always regarded, as I have sometimes to regret, when looking at some of our cases in which it is impossible to obtain a free ventilation. The Pickard case can be taken to pieces in two minutes, and put together again in the same space of time. The top plate can be lifted off, the front plate the same, and the other three come away together, so that planting, watering, ventilating, can be as conveniently performed as if we were dealing with one plant in a pot, instead of a collection grouped to form a miniature garden. But the chief peculiarity of this case is the heating apparatus. This consists simply of a boiler, into which boiling water is poured through a funnel, by means of an invisible orifice at the side, and drawn off when cold by means of an invisible tap underneath. We find it an easy matter to keep up a steady heat of 60° to 80° as may be desired, by filling the case once, twice, or three times a day, according to circumstances. When worked to its full power, as it might be needful to do in the depth of winter, the change of water should be made first thing in the morning, mid-day, and last thing at night. At this time of year all stove ferns in the case are satisfied by having the case filled once daily, namely, in the morning, but from June to the end of September we find it unnecessary to use the boiler, and by good management any stove ferns that will bear to be shut up in a glass case, do amazingly well if there be a little skill used in shutting up sun-heat in the afternoon. I say these cases are the best, because in the first place they are roomy, admit a full view of the interior, are easily ventilated, and easily heated, and their crowning virtue is that they may be taken to pieces instantaneously, and it is upon that plan all fern cases should be constructed. You will remember, perhaps, the figure of a fern case which was published in the first number of the FLORAL WORLD. That has been and is now one of the noblest ornaments of our drawing-room; it is one of a pair of Ransome's vases; the two vases occupy the two windows, and my connubial partner manages them admirably, so that they are exquisitely beautiful any day in the year winter and summer. But there is a radical defect in those, and nearly all of our other cases, except such as I have had made of late years. There is say a door in front, and a breadth of perforated zinc all round, next the top lantern. But these contrivances do not allow of a circulation of air through the case, and consequently at those midway seasons when rooms are without fires, and the weather is cold and damp as at this time of year, some amount of mildew will appear, the inevitable consequence of a close atmosphere and confined exhalations. I say, then, to all the lovers of ferns, let your next venture be a pair, or one, of Pickard's cases, and one of Miss Malins's books. You will not be long determining that it was the best outlay you ever incurred in the pursuit of horticulture without difficulties. But you may have cases of old-fashioned make imperfectly ventilated, as some of mine are. It is easy to improve them, and the same rule will apply to their improvement as the manufacture of new cases of similar design, and that is that there should be *two doors*, one in

the front, and the other at the back, and when these are both opened there will be a draught through, and there never need be damp or mildew. This latest experience confirms every point I insisted on in the second edition of "Rustic Adornments," in explaining that fern cases are greenhouses in miniature, and need the same or similar contrivances for ventilation as have been found necessary in the construction of greenhouses. Remember this rule, and when you build or order to be built a Wardian case, let there be two doors to it, and if it can be arranged so as to take to pieces quickly, the better for convenience of management and the health of the plants.

Ever since I took to the use of the cocoa-nut waste I have made it a rule to continually renew the plunging beds, so as to have at hand at all seasons plenty of the material well rotted. You want nothing else for all the quick-growing flimsy-fronded ferns than cocoa-nut waste that has been in use at least twelve months in a plunge bed. When I say "flimsy," I do not mean "filmy," but all such ferns as have fronds of a thin texture, for these have fine roots, and the cocoa waste is admirably adapted for any plants that root delicately and abhor drought. But for ferns with stout fronds and robust habit, I prefer to use from one-fourth to one-half of turfy loam with the cocoa waste, as the latter contains scarcely enough solid food for the more robust kinds of ferns. So, again, the flimsy-fronded ferns are more partial to shade and a close atmosphere, and on the other hand those with fleshy, horny, leathery, or papery fronds, like a moderate amount of sun, a rather free ventilation, and less moisture at the roots than the others. I do not mean to say there are no exceptions to these rules, but they hold so generally that herein the merest novice in fern growing may make the ferns themselves teachers of the points most important in their culture. Take *Nipholobolus pertusus*, which has fleshy fronds, and shut it up in a damp atmosphere, and you will soon lose it; on the other hand, put a *Cystopteris* in such a dry air and dry soil and sunshine as the *Nipholobolus* would thrive in, and you shall see it dwindle away, a witness of ill-treatment.

In planting fern cases I now use cocoa-nut waste alone, and advise everybody else to do the same. There is no one material known, not even Wanstead peat, that suits ferns so well, and especially those that are adapted for Wardian cases. Our Pickard cases are planted thus—a layer of crocks over the zinc trough, then a layer of moss, and on that the cocoa waste heaped up and pressed down, so as to form a firm rising bank highest in the centre, and with pieces of burrs picked out and broken for the purpose, to diversify the surface and prevent it looking like a mere heap of mahogany sawdust. The ferns are inserted between these small rocks, and on the disposition of the plants it will depend whether you have a bit of fairy land or a muddle.

Before giving the names of the ferns in our cases, I will remark that it is bad policy to plant stove and greenhouse ferns together in any case, whether heated or not. Nevertheless, among the stove ferns there are so many remarkable forms that we cannot prohibit the combination, though we must warn beginners that it requires extra care to get such a mixture through the winter safely. In one of the cases now before me there is in the centre, raised above all the rest, on a sort of rocky cone, a fine plant of *Davallia bullata*, which is sending out its claw-like rhizomes in all directions, and is covered with most elegant triangular fronds of a

most delicious green hue, and with the delicate divisions characteristic of the *Davallias*. Behind this, on the right hand, is *Pleopeltis membranacea*, a very curious and rare fern, with broad wavy fronds like a hart's tongue, and, as the tenderest fern in this case, the key to the management of the heat at all seasons. To correspond with this, on the left is *Hymenolepis spicata*, a handsome and fantastic fern, the fertile fronds terminating in spikes of fructification like brown chenille; these sometimes divide into two distinct forks, so curious that no description can convey an accurate



HYMENODIUM CRINITUM.

idea of it. Between these two, so as to be immediately behind the *Davallia*, is *Lygodium scandens*, trained up the back glass on metal guitar strings, which are a thousand times better than copper wire for any training or suspending in fern cases. In, or nearly, the same line as the *Davallia*, on the right of it, are *Aneimia collina*, another rare and curious fern, which you may now buy for five shillings. The fronds are once divided, and yellowish green, and from the lowest pair of divisions one or two seed-bearing spikes rise, which give it a distinct and interesting character. To match

this, on the left is *Asplenium rhizophorum*, a truly magnificent fern, with long arching fronds, once divided, with light green wavy divisions, decreasing in size from the base to the point, so that the frond ends at last in a sharp spear-like summit, where generally there is a little germinal knob which will produce a plant if encouraged to do so. *Pteris serrulata*, and *Doodia caudata*, come into the same line to fill up. In the front of the case the centre plant is *Asplenium polymorphum*, the lower fronds of true *Asplenium* type, the upper fronds as finely divided as the submerged.



ASPENIUM PALMATUM.

leaves of the water ranunculus, and the colour a delicious tone of bluish green. With the exception of the next to be named, this *Asplenium* is the most beautiful fern in the case; it is, moreover, cheap, and every fern grower who has not got it should have it at once; it is ten times more lovely in a Pickard case than in a pot in the greenhouse. Now we come to the most beautiful of all, it is *Todea pellucida*, growing in cocoa waste alone at a rapid pace, had no artificial heat all last winter, and as good in colour, strength, attitude, and luxuriousness, as the best I have seen in

*hymenophyllum* cases in the best fern houses in all my wanderings. Here's a gem to rank with *Trichomanes*, and the delicatest of the *Hymenophyllums* for rarity and beauty, yet as easy to grow as a common polypody.

The case I am describing has a pair of *Todeas*—one at each end in the front; one I had from Mr. Sim, of Footscray, the other was given me by my dear friend, Mr. Blunt, who is now exploring the forests of Brazil for orchids for one of our great London nurseries. This may meet his eye, and he will rejoice to learn that his plant now covers a space equal to the surface of a full-sized dinner-plate. Between these corner pieces and the *Asplenium* are planted on one side *Pteris tricolor*, which you know all about, and which does not thrive in the case as it does under pot culture; and *Lomaria attenuata*, a refined form of *Blechnum spicant*, the young fronds being of a bright rose colour, changing to green as they get matured. Whoever follows this planting will have a superb picture and but few difficulties to contend with. I have given the planting in detail, expressly that it may be followed.

Now for another style. The centre is to be *Phlebodium sporodocarpum*, a grand polypody with creeping rhizome and bold once-divided glaucous fronds. It is sometimes catalogued as *Polypodium glaucum*, a name which I prefer, but I must use the latest to show that I am not an "old fogey," or, as the innovators call it, "behind the age." On each side of this two equally distinct and remarkable ferns—one of them, *Hymenodium orinitum*, one of the rarest, and unquestionably the most curious fern in cultivation. Mr. Sim has it in his catalogue at forty-two shillings, which is cheap. I had mine of Mr. B. S. Williams, of Seven Sisters Road, Holloway; and here is a picture of it that you may judge for yourself as to its very remarkable outlines. The crown is like a miniature bird's-nest, out of which, instead of callow fledgelings, we have rising in a looped form the young fronds, which are one mass of long black hairs. As these expand they become huge obovate leaves, smooth, hard, and yellowish green on the upper side, and on the under side sparsely covered with the same black hairs which were so conspicuous and curious when the fronds first emerged out of the bird's nest. To match this, *Asplenium palmatum*, a very distinct and robust-growing species, which you may buy anywhere for a shilling and grow in stove, greenhouse, or case, and all it wants is plenty of root-room and plenty of water. Another of smaller growth and more positive beauty, is *A. varians*, with lovely palmate leaves, each with a rib of gray down the centre of the divisions, and the surface of the leaf shiny as if varnished. For another half dozen the positions of which cannot much matter: *Humata pedata* grows with a creeping foot like a *Davallia*, and the fronds triangular and a lovely tone of green; *Asplenium bulbiferum* var. *appendiculata*, *A. Vietchianum* (both these are viviparous and may be increased by taking off the young plants and putting them under bell-glasses); *A. fragrans*, *A. formosum*, and *A. fabianum*. Though my space is exhausted let me add that for a bell-glass twenty inches high, one of the best ferns known for a single specimen is *Pteris flabellata* var. *crispa*. This, with *Selaginella apoda* for surfacing and a few little *Adiantums* to surround it, makes a beautiful object for one of the largest-sized fern shades, and it is often more difficult to plant those shut-up contrivances than a large rectangular case, because, with the best of management, the ferns are of necessity kept extra close. In the Pickard plant-cases there



is such a large body of air that a few days' neglect will do no serious harm and the cocoa-nut waste never mildews or harbours vermin. By these two helps the sphere of domestic fern culture is indefinitely expanded.

SHIRLEY HIBBERD.

### EXHIBITIONS OF THE MONTH.

THERE have been two great exhibitions in London, and the usual number of local country shows, most of them far more satisfactory than might have been anticipated after such an ungenial summer. It shows how a few weeks, or even a few days, of really bright weather will restore things to their normal standard; thus, when the dahlia season commenced the growers were disheartened by the prevalence of thrip, and most of the light flowers were spoiled for exhibition, yet by the date of the Crystal Palace Show the thrip had almost disappeared, good flowers were plentiful, and at that and the subsequent exhibition of the Royal Horticultural Society, dahlias were exhibited in as fine condition as was ever seen. At the Crystal Palace Mr. Turner took the lead in dahlias, with Mr. Keynes second; at Kensington Mr. Keynes was first, and Mr. Turner second. Hollyhocks have not been largely exhibited, but the few shown were magnificent at each of these shows. All the herbaceous summer flowers, on which exhibitors rely at this season of the year, have been more or less affected by some inscrutable causes adverse to their proper development. Hollyhocks, phloxes, gladioli, asters, have been all more or less below the mark, and in some places scarcely worth the rent of the ground they occupied. It is the more creditable therefore to those exhibitors who have made good positions at the shows, for success has been accomplished under a more than ordinary pressure of difficulties.

We shall, as on former occasions, in order to convey as much useful information as possible in a small compass, gather together the leading points under a few separate paragraphs, and first we begin with—

**DAHLIAS.**—The following is a list of Mr. Turner's 48, for which the first

prize in the nurserymen's class was awarded at the Crystal Palace—Lord Palmerston, Lady Popham, Lady Franklin, Goldfinder, Earl of Shaftesbury, Heroine, Commander, Hon. Mrs. Trotter, Madge Wildfire, Criterion, Sidney Herbert, Model, Captain Hawes, Cygnet, Chieftain, Lady Elcho, Lord Cardigan, Joy, Hope, Volunteer, Pioneer, Hugh Miller, Dinorah, Pluto, Lord Derby, Duchess of Wellington, Perfection, Sir George Douglass, Lord Eversley, Miss Pressley, Mr. Stocker, Miss Pigott, Mr. Boshell, Marquis of Beaumont, Chairman, Jenny Austin, Norfolk Hero, Mrs. H. Vyse, Cherub, Warrior, Juno, Lord Dundreary, Golden Drop, Andrew Dodds, Umpire, Bob Ridley, Delicata, George Brown. Mr. Turner's 24 comprised, Earl of Shaftesbury, Madge Wildfire, G. Brown, Golden Drop, Bob Ridley, Mrs. Vyse, Mr. Stocker, Mrs. Pigott, Model, Hugh Miller, Andrew Dodds, Lady Popham, Lord Derby, Umpire, Chieftain, Norfolk Hero, Mrs. Bush, Lord Dundreary, Lord Palmerston, Cygnet, Captain Harvey, Criterion, Pioneer, Delicata. Mr. Keynes's 12 fancies were Harlequin, Elegans, Miss Jones, Countess of Bective, Queen Mab, Mrs. Crisp, Pauline, Confidence, Nora Creina, Starlight, Lady Paxton, Madame Sherrington.

In the amateurs' class for 24, at the Kensington Show, J. T. Hedge, Esq., Reed Hall, Colchester, took first prize with Madame Guite, Mrs. Crawford, Heroine, Madge Wildfire, Cherub, Emperor, Juno, Commander, Alice Downie, Standard Bearer, Inaccessible, Admiral Dundas, Pandora, Lady Popham, Criterion, Lord Palmerston, Neville, Keynes, Beauty of Hilperston, Norfolk Hero, John Keynes, and Chairman. From the Rev. C. Fellowes, Shottesham, near Norwich, came good blooms of Robert Bruce, Mrs. H. Vyse,

Lady Elcho, Lady Popham, Pre-eminent, Fanny Keynes, Juno, Golden Drop, Earl of Shaftesbury, Mrs. Bush, Lord Palmerston, Andrew Dodds, Acme, George Elliott, Triomphe de Pecq, Chairman, Mrs. Dodds, Cygnet, Lord Derby, Norfolk Hero, Bob Ridley, and Village Gem. From Mr. Perry, Castle Bromwich, came a good third collection, consisting of Lord Palmerston, Cherub, Lilac Queen, Donald Beaton, Countess of Portsmouth, Lord Derby, Lord Bath, Golden Drop, Mrs. Bush, Jenny Austin, Beauty of Hilperton, Miss Watts, Lord Cardigan, Chairman, Bob Ridley, Model, Lady Popham, Midnight, Juno, George Brown, and Delicata. In the nurserymen's class of 18 blooms of Fancy Dahlias, the best at Kensington were from Mr. Keynes, who showed Queen Mab, Conqueror, Carnation, Triomphe de Roubaix, Lady Paxton, Gem, Starlight, Mary Lauder, Pauline, Souter Johnny, Garibaldi, Le Premier, Patent, Confidence, Norah Creina, Harlequin, Baron Alderson, and Reliance. Mr. Turner was second with Harlequin, Empereur de Maroc, Countess of Shelburn, Lady Paxton, Summertide, Gem, Triomphe de Roubaix, Charles Perry, Comet, The Cure, Mary Lauder, Jupiter, Starlight, Fancy Queen, Queen Mab, Pauline, Pluto. Mr. Cattell, Westerham, sent Harlequin, Summertide, Garibaldi, Lady Paxton, Norah Creina, Blondin, Unique, Mrs. Charles Kean, Queen Mab, Elizabeth, Pluto, Marc Antony, Starlight, Triomphe de Roubaix, Gem, Elegans, Pauline, and Confidence. In the amateurs' class at Kensington, the best Fancy Dahlias came from Mr. Corp, who sent, among others, Lady Paxton, Mary Lauder, Gem, Confidence, Garibaldi, Pauline, Wm. Corp, Queen Mab, Reliance, Elegans, and Harlequin. From the Rev. C. Felloses, who was second, came Triomphe de Roubaix, Oliver Twist, Mary Lauder, Queen Mab, Harlequin, Jessie, Lady Paxton, Pauline, Flirt, and Splendida. From Mr. Perry came Summertide, Unique, Comet, Oliver Twist, Lady Paxton, Pauline, Gem, Starlight, Harlequin, Countess of Bective, and others.

Of Seedling Dahlias, the best were Charlotte Dorling (Turner), Le Premier (Keynes), Serenity and Bride (Rawlings), Charles Turner (Keynes), Lord Dundreary (Turner).

HOLLYHOCKS.—A long file of noble spikes of flowers made a distinct feature at the Crystal Palace, though the dahlias and gladioli were in higher favour with visitors. Messrs. Paul and Son took first prize for spikes with a noble set to which they had hung the tallies at the top of each spike, very much to the disfigurement of their own flowers. Messrs. Paul's lot consisted of Glory, deep crimson, large and massive; Majestic, finely formed, colour rosy-pink, the edges stained, as is commonly the case with flesh and rose coloured flowers; Shrubland Gem, pale sulphur, exquisite; Lady Dacres, stained; Rufus, very dark maroon-crimson, a remarkably fine flower; Sir W. Middleton, salmon, as large as a dinner-plate, yet not coarse, and most beautifully proportioned; Reine Blanche, the best white; Geant des Batailles, Emperor, Violette, this is exquisitely beautiful both in colour and form, and has the good property of improving as it fades; Diamond, Brunette, a fine dark. Messrs. Downie, Laird, and Lang, of Forest Hill, and Mr. Chater, of Saffron Walden, had good collections of spikes; the principal varieties amongst them were Purple Prince, a noble dark flower; Miss Matthews, a small yellow; Beauty of Dysart, delicate flesh, fine; Mr. Deane, like Sulphur Queen, and a shade better; Mrs. Balfour, cerise-red, flowers of immense size, and finely formed; Lady Dacres, salmon, large, dirty edges; Stanstead Rival, light red, large and fine; Dr. Canny, a bad flesh; J. B. Ullett, rich crimson, large, and worthy of a more euphonious name; Queen of Buffs, a good buff, very showy, but the guard about twice as wide as needful; Mrs. Chater, rose-pink, bright and clean, large, fine form, spike crowded. The collection of single bloom were beautiful as exhibition subjects, and not a whit less interesting than dahlias, though it is only by spikes that any variety can be properly judged. All the best

of the established varieties were shown in these stands, and amongst them we noticed one bloom of Black Knight, a scarce and curious variety, darker than Black Prince, the guard very large, and the general character of the flower refined and courtly, the texture that of satin. At Kensington Mr. Chater, Messrs. Downie and Laird, and Mr. W. Paul, were the principal exhibitors. Among the collections were good spikes and blooms of the following:—Countess Russell, rosy-salmon; Ne Plus Ultra, violet; Morning Star, crimson; Beauty of Walden, rose; Excelsior, buff; Governor-General, crimson; Miss Lizzie King, yellow; Rose Celestial, rosy-crimson; Beauty of Milford, rose; Lady King, dark mulberry.

**GLADIOLI.**—These constituted the grandest feature at both the exhibitions, and they were nearly the same at each, so a memorandum of those shown at Sydenham will suffice. They were literally poured in by the various exhibitors, and constituted quite a show of themselves, and a very gay and grand show too; and those who did not care to scrutinize and criticise the delicately marked hybrids, now established as first-class florists' flowers, could enjoy the blaze of colour of *Brenchleyensis*, the value of which to catch the eye and arrest the attention the exhibitors seemed to be fully aware of—Messrs. Youell especially, who secured the first prize. It was evident by the profusion of gladioli and their surpassing excellence—for there was not much difference as to the quality of the flowers in the several collections—that the disease which has alarmed many growers had not been universal, and that therefore there need be no fear but that the flower will maintain its position, and perhaps rise higher and higher in public estimation. The leading exhibitors were Messrs. Youell, Mr. Standish, Mr. W. Paul, Messrs. Carter, and M. Lois, Rue de la Pelleterie, Paris. The French flowers were generally small, though they had an extra prize. Among the various collections we noticed the following varieties as pre-

eminently beautiful:—*Brenchleyensis*, scarlet, and the best for grouping; *Achilles*, red and white; *Comte de Morny*, cerise, with a white throat; *Egerie*, rose striped; *Isoline*, rosy-pink; *Le Poussin*, clear red, white throat; *John Bull*, saffron, with white veins; *Linné*, cerise, blotched with yellowish-white; *Mrs. Standish*, pearly-white, suffused with crimson; *Miss Howell*, rosy-salmon; *Madame Binder*, carmine, striped white; *Ophir*, purple, with gold spots; *Penelope*, creamy-white; *Vesta*, carmine, spotted white; *Edith Dombrain*, creamy-white, tinged with blush; *Madame Rabourdin*, lilacy-red, very fine and showy; *Rosenberg*, cerise; *Napoleon III.*, orange-scarlet; *Ensign*, orange-scarlet; *El Dorado*, gold-yellow, lower petals striped red; *Adam Bede*, peach, lower petals deep scarlet; *Madame Leseble*, pure white, striped with carmine; *Osiris*, violet-purple; *Eugene Domage*, rich crimson, dark throat.

**MISCELLANEOUS.**—*Lilium auratum*, shown by Mr. Standish, attracted more attention than any other novelty. All the gardeners have heard of it by this time, and there was a general buzz of admiration, surprise, and pleasure at this opportunity of seeing the plant with its magnificent blossoms in full perfection. *Lonicera reticulata*, the golden netted leaved honeysuckle, was also shown by Mr. Standish. It is a charming shrub, and well adapted for pot culture, on some sort of balloon trellis, for the decoration of the conservatory. *Phloxes* were shown, but in poor condition, and not many of them; and neither of the shows afforded any encouragement to growers of *phloxes* in pots, Messrs. Cattell being the only exhibitors for Dr. Lindley's prize at Kensington. *Roses* were not plentiful; a few were good, many were poor in character, and very carelessly exhibited. Messrs. Paul and Son had the best 24: among them were fine blooms of *Celine Forestier*, *Madame C. Caprelet*, *Madame Vidot*, *Victor Verdier*, *Made-moiselle E. Verdier*, *Pauline Villot*, *Belle de Bourg-la-Reine*, *Duke of Cambridge*, *Comtesse C. Chabillant*,

Dr. Bretonneau, Colonel de Rougemont, Gloire de Santhenay, Louise Perronny, Leon des Combats, Souvenir de la Reine d'Angleterre, Souvenir d'un Ami, Archbishop of Paris. Verbenas were by no means so striking a feature as usual at autumn shows. Mr. Turner took first prize at Sydenham with General Simpson, Kathleen, King of Verbenas, Madame H. Steiger, Anglaise, Springfield Rival, Nemesis, Snowflake, Foxhunter, Delicatissimum, Lady Taunton, Firefly, Great Eastern, La Gloire, Lady Seymour, Ariosto improved, Lady Middleton, Rose Imperial, Prima Donna, Warrior, Lord Elgin, Geant des Batailles, Zampa, and Fireball. There were also good collections from Mr. Smith, of Hornsey Road, Mr. Grimby, Stoke Newington, Mr. Knight, Battle, Sussex, and Mr. Reid, gardener to J. H. Hunt, Esq., Sydenham Hill. The only novelty of any value was a seedling verberna from Messrs. Perkins and Sons, of Coventry, who put up small trusses at the further end of the fruit table. This verberna is called Lord Leigh; the colour is intensely vivid orange-scarlet, with white eye, the flowers large, slightly puckered, not very flat, and the trusses apparently loose. It may prove a first-rate bedder, but it is impossible to estimate fairly the value of any verberna in the present mode of showing them.

**FRUIT SHOWN AT THE CRYSTAL PALACE.**—This was a most interesting exhibition. Mr. Henderson, of Trentham, took the first prize for a collection of eight dishes, Mr. Dawson second, Mr. C. Turner third. Mr. Henderson had Black Hamburgh and Muscat grapes, a Providence pine, a Trentham white-fleshed melon, very small, but by the very look of it of excellent flavour, Barrington peaches, Violette Hative neectarines, Morello cherries, and Moor Park apricots. Mr. Dawson had Bon Chretien pears, Violette Hative neectarines, Noblesse peaches, not very well coloured, a small luscious-looking melon, Morello cherries, and a Queen pine. The contest in the class of six dishes was most spirited. Mr. Henderson was again first in this class, Mr. Bailly

second, Mr. Page third. In these collections were fine examples of Black Hamburgh and Muscat grapes; Walburton Admiral, Noblesse, Bousell, and Royal George peaches; Red Roman, Ebrage, and Brugnion neectarines; Moor Park apricots; Enville, Queen, and Montserrat pines; green-gage plums, and a few melons. Pines were mostly good, but the only specimens worthy of remark as examples of good culture were a Queen from Mr. Chapman, of Hill House, Streatham, and a fine Antigua from Mr. Henderson. Mr. L. Solomon sent a pair of Queens of immense size, but they were ugly fruit, and not well coloured. The grapes were a good exhibition, and though a few of the black grapes were not well coloured, the bunches were handsome, and the berries uniform in size, so that the distinctions as to merit were few and not easily determinable. Mr. Meredith, of Garston, near Liverpool, sent a noble basket of twelve pounds of Black Hamburghs, and a basket of three bunches, the united weight of which was nine pounds. These were black as jet, and not a trace anywhere of unskilful handling. We have rarely seen so fine a show of Black Hamburghs; they were the best of the contributions to this part of the exhibition. Other kinds well shown were Lady Downe's Seedling, Bidwill's, West's St. Peter, Chasselas Musqué, and Muscats. The largest single bunch was of Trebbiano, from Mr. Pottle, of Woodbridge; the weight 4 lbs. 7 oz. Mr. Goldsmith had the second prize in this class for a bunch of Barbarossa, and Mr. Mead for a bunch of Black Hamburgh, which was large and heavy, but irregular and poorly coloured. Peaches and neectarines were of the same kinds as those just named as in the collections; the best single dishes were Violette Hative peach, from Mr. Henderson; Noblesse, from Mr. Broadway; and Red Roman neectarine, from Mr. Monro. Melons, figs, plums, and cherries were well shown, but not in great quantity. With apples and pears the tables literally groaned, and these, apples especially, were unusually fine.

**DECORATIVE PLANTS SHOWN AT KENSINGTON.**—Messrs. Veitch sent a very pretty collection of plants remarkable for fine foliage; amongst them a new *Alocasia*, named *Zebrina*. With this were specimens of *A. macrorhiza* var., and *A. metallica*. The new composite climber, *Mutisia decurrens*, was shown in bloom; the large *gasania*-like orange blossoms were much admired. *Calceolaria ericoides*, from Chili, with small yellow flowers and heath-like leaves, was exhibited, but we presume not as a novelty, as it has been in the country many years. A few orchids were included in Messrs. Veitch's contribution; *Vanda cœrulea*, *Cattleya elegans*, *Odontoglossum grande*, *Aerides suavisimum*, *Calanthe Dominiana*, *Cattleya Dominiana alba* were the most conspicuous for beauty. Messrs. A. Henderson, of Pine Apple Place, sent a collection of *Caladiums*, and Mr. Bull some "novelties," among which there were two handsome *Adiantums*. The competition for the prize for standard plants to decorate the dinner-table was a miserable affair, though this part of the exhibition was the most crowded, every one seeming to expect an interesting display. The electro-plated stands supplied by Elkington were the most attractive part of the affair, and these, as expensive articles, were not strictly

in accordance with what we suppose to be the spirit in which the competition was invited. Messrs. Veitch, Bull, Salter, and Macintosh competed, and among the plants were specimens of *Eugénias*, *Solanums*, double *Petunias*, *Grevillea robusta*, *Celosias*, *Coleus Verschaffeltii*, *Dracena terminalis*, *Tropæolum*, etc. Among the miscellaneous articles were some rustic flower vases, cases for pots, etc., from Messrs. Hooper, of Covent Garden, and Messrs. Barr and Sugden, King Street, Covent Garden. These were much admired. The best contribution for a conservatory tub was from Messrs. Ransome, of Ipswich. The tub was made of patent imperishable stone, with panels to slide up and down, and the whole to be taken to pieces by removing the ornamental top. Two magnificent wooden tubs were sent by Mr. Ormson, of King's Road, Chelsea, one of pitch pine, the other of oak, stone, and ornamental iron. These could be readily taken to pieces, and would be found of great value in a grand conservatory.

**FRUIT.**—The most interesting in this part of the show was the collection of Grapes from the Society's conservatory at Chiswick. The miscellaneous exhibitions of fruit were few in number, and not much amongst them to interest.

## THE YOUNG GARDENER'S EDUCATOR.

WE know of hundreds of good books on garden economy and the routine of horticultural practice in any and every department, but we know of only two thoroughly good books designed for the young gardener ambitious of rising in his profession, and therefore anxious to master its highest elementary principles. Those are Loudon's "Self-Instructor," and Keane's "Young Gardener's Educator," the first published many years since, the second "new this day."\* Mr. Keane has hit upon a novel scheme, and taken his place bravely as schoolmaster for

all gardeners, young and old, who choose to accept his lessons. In a neat octavo volume he gives, in the form of dialogues, a series of lessons on Land Surveying, Botany, Vegetable Physiology, Entomology, Geology, Chemistry, Physical Geography, English Grammar, and other useful subjects, to which he adds, by way of supplement, a complete glossary of technical terms. Whoever wishes to make a present to a young gardener, this is just the book for the purpose, and every amateur gardener will find it worth perusing, and in some parts,

\* "The Young Gardener's Educator." By William Keane, late gardener at Orwell Park, Ipswich. Groombridge and Sons.

learning by heart. As a sample is better than a mere recommendation, we select a passage on Garden Beetles, which will show the style in which Mr. Keane conveys his useful instructions:—

“*Mr. B.* The whole race of animals preserved to the present time in the same flourishing state in which they were at first created; the rules which govern them, not varied by capricious chance, but administered with unalterable regularity; the impulse of instinct directing them to proper food, to the propagation of their kind, and to suitable habitations; the structure of their frames, and of every particular organ of action so suitable to their immediate use; the several tribes of creatures subordinate to each other, conducive in various respects to the good of man, are all evident and incontestible proofs of skill, contrivance, and power.

— — — Each moss,  
Each shell, each crawling insect holds a rank  
Important in the plan of Him who framed  
This scale of beings—holds a rank, which, lost,  
Would break the chain, and leave a gap  
That Nature's self would rue.

The cockchafer (*Scarabæus melolontha*) is so familiar to every gardener that its figure needs no description from me, though it is probable you are not so well acquainted with its habits. It is a very mischievous insect in its caterpillar state, living in the ground, and making sad havoc among the roots of young crops. The cockchafer has sometimes appeared in particular districts in such swarms as to threaten the destruction of everything vegetable.

“*Son.* That, no doubt, was owing to the destruction of rooks, as we have heard of many instances where the wholesale destruction of rooks was followed by such extraordinary increase of wireworms, cockchafers, and other such grubs, as to require the speedy restoration of the rooks.

“*Journeyman.* I knew an old farmer in the country who always called the rooks mischievous vagabonds, that they pilfered his beans when they were coming up, and his potatoes, and he fancied one day during barley sowing, when a large

quantity of rooks were following the plough, that they were eating his seed barley; he ordered one to be shot, and in the poor bird's crop not one grain of barley was found, but it was full of wireworms, cockchafers, etc.

“*Mr. B.* Every day's experience tells us that birds are amongst the most efficient instruments of Providence for destroying the insects that would otherwise overrun us. And people may rely upon it that they cannot more effectually encourage the ravages of these insidious foes than by waging war upon the creatures which naturally feed upon them. The eggs of the cockchafer are deposited in the ground by the parent insect, whose forelegs are very short, and well calculated for burrowing in the ground. From each of these eggs proceed after a short time, a whitish worm with six legs, a red head and strong claws, which is destined to live in the earth under that form for four years, and there undergoes various changes of its skin, until it assumes its chrysalid form. The larvæ having continued four years in the ground, are now about to undergo their next change. To effect this they dig into the earth, sometimes five or six feet deep, and there spin a smooth case, in which they change into a pupa or chrysalis. They remain under this form all the winter until the month of February, when they become perfect beetles, but with their bodies quite soft and white. In May the parts are hardened, and then they come forth out of the earth in the evening, when you, no doubt, have observed them in their flight to dash against your person and fall to the ground. After enjoying the pleasures of an improved existence for some time they lay their eggs in the ground and die.

“*Journeyman.* As I now know the habits of the cockchafers, I shall take some trouble when they bang against me to find them out, and to destroy the parents of such mischievous grubs.

“*Mr. B.* The garden beetle, named by Linnaeus *Scarabæus horticola* (also called the Maybug), is another very destructive beetle. When the roses are in full bloom in May and June, they sometimes do very extensive

mischievous to the flowers by eating out the anthers and consuming the petals. Having deposited about a hundred eggs in the earth the female dies, and the larvæ hatch and commence their attacks upon the roots of vegetables of various sorts. It is, however, on lawns and pastures that the larvæ, like the cockchafer, commit the greatest ravages. It is said that they are feeding three years, and they reside about an inch beneath the turf; but as winter approaches they retire deeper into the earth; and even in November when frost has set in, they have buried themselves three feet deep, where they form cells, and enter the pupa and quiescent state until the following spring, when the beetles emerge about the time the roses bloom. It is a pretty shining beetle, clothed with longish hair, dark on the upper, and yellowish on the under side. For their destruction it is recommended that a cloth should be placed under the branches previously to shaking them, and as this species flies in the day, this operation must be performed early in the morning or in the evening. We should also take advantage of mild weather in the spring to fork over the ground lightly, as at that time the larvæ are near the surface, and become an acceptable treat to the blackbirds, thrushes, robins, and sparrows. Among the pretty insects of another genus, *Coccinella*, you will find the gay tribe of ladybirds which have even escaped the sad prejudices of our nation as regards insects, so that children caress these handsome and most useful creatures in England, and in Ireland they are equally esteemed, being called the cows of God. There are upwards of thirty different species, some are scarlet with black spots, others yellow with black, or black with red or yellow, with white spots. It seems, however, that many persons are unacquainted with the early stages of their existence, and as this has led to the fatal error of destroying the larvæ, which are amongst the most valuable aids the cultivator has, in keeping under the aphides, it becomes very important that the gardener should be at once enabled to distinguish his friends from

his enemies. If we examine the underside of the leaves of cinerarias, or any plants when they are infested with plant lice (aphides), we shall find little clusters of orange or buff-coloured eggs, deposited close together on their ends, and very much resembling those of the white cabbage butterflies at the first glance, but they are very different when magnified; they are more elliptical, fleshy, and smooth, not being sculptured as those of the papilios are. The first brood hatches in May, when the pearly empty shells alone remain, and the little black animals issuing from them run over the leaves in search of food. At this time they are rough with hairs, and have six short strong legs; as they grow they change their skins, and eventually those of the largest species attain the length of five or six lines. The larva now has a slate-coloured skin, smooth, but dull, the body is attenuated towards the apex, and extends far beyond the six black sprawling legs, so that it looks like a little alligator, which it likewise resembles in its voracious and carnivorous habits. The ladybirds are probably to be found the whole year, as they winter under bark, in chinks of posts, palings, etc., and are seen in the earliest days of spring, if the weather be fine, and late in the autumn also. Immense numbers are generally seen in the hop-grounds in Kent, where their good services are gratefully acknowledged by the farmers. The vast quantities of aphides which the larva of the ladybirds destroy cannot be calculated, for they seem never to cease from feeding except when they are moulting, and the ladybirds themselves are equally active. One sees these pretty scarlet animals running over the plants until they meet with an aphid, which they immediately seize with their broad feelers, and keep squeezing out the saccharine contents until the crumpled skin alone remains; they then attack another, and will then proceed until leaf by leaf the plant is freed from this disagreeable and destructive blight."

We wish Mr. Keane had avoided the dialogue form, but to many that perhaps may be preferable.

## ON THE IRIS.

THE word *Iris*, we are informed, signified in the ancient Egyptian language, "Eye," or "Eye of Heaven," a term not inappropriate to this lovely genus. It also has received much notice from modern as well as ancient nations, though not so much cultivated now as some years back—at which time it was a reigning favourite, insomuch so that the Caffres, from whom great quantities were procured, call it "White-man's-flower." Now, though we may possibly be able to spare a few of the minor species of this extensive genus, to make room for, and in compliment to, our more recent introductions, when we consider the profusion of flower, the variety of colour, and the ease with which it is grown, this plant will be found to occupy a place of no mean importance. There are about 150 species of iris, for the greater part tuberous-rooted, hardy, herbaceous plants; about six species are bulbous; and all, or nearly all, highly ornamental, and fully deserving the oriental appellation so long ago bestowed on them. Two only are natives of Britain—*pseudacorus* and *foetidissimi*, both medicinal, but not worth notice to the florist. At the head of all the tuberous species stands *I. Susiana*. This is indeed a most singular, yet beautiful species. To say it resembles the livid markings on the back of a toad is perhaps no great inducement to the amateur; yet to nothing but that, or the flowers of *Cereopogia elegans*, can it be compared. Some difficulty is occasionally felt in causing this plant to blow; but if planted in a warm situation, on a rich friable loam, and left undisturbed, it will flower freely in the course of two, or at most three years. It will bear forcing under judicious management: for this purpose, choose a strong root, and in November put it into a large pot (32), using a mixture of loam and peat, with sufficient sand to keep it open; keep it in a cold frame till January, when the heat must be increased very gradually till it will bear the stove,

which should be about the beginning of March, and as soon as the flower is expanded, remove it into the greenhouse. This, though attended with trouble, is repaid with one of the most extraordinary flowers in Nature.

Of the tall growing kinds—*Germanica*, *pallida*, *florentina*, *sambucina*, *lurida*, and *variegata* may be mentioned as the most prominent: these are well suited for open shrubberies, etc. Of the dwarf varieties, such as *Chinensis*, *biflora*, *sub-biflora*, *cristata*, *pumila*, *flavissima*, *graminea*, etc., are very pretty ornaments of the flower border, rockwork, etc., and will bear the smoke and dust of confined suburban districts. *I. fimbriata*, *orientalis*, and *flavescens*, are rather tender, requiring the greenhouse to bring them to perfection; they should be potted in soil similar to that recommended for *I. Susiana*; they require good pot room; and to cause them to flower finer and more freely, remove the suckers as soon as they appear.

We now come to the bulbous-rooted species:—They are *xiphium*, *xiphioides*, *alata*, *Lusitanica*, *tenuifolia*, and *Persica*. The first two are more strictly florists' flowers; the first, *xiphium*, is the Spanish Iris of florists, and *xiphioides* is commonly known as the English Iris. This is more extensively cultivated than any other species, and it well deserves the preference shown it: in this we have a greater variety of colours than is to be found in one species of any other genus: from the purest white to a bright azure, it ranges on to the deepest violet; and even red is found in the tints of this lovely flower—a colour very uncommon to a flower in which blue is, or ever has been, a predominant colour. Yellow is, I believe, absent: this I should think might be easily remedied by impregnation, as it is found in some of the varieties of *xiphium*, and that, too, extremely bright. This, however, is merely surmise; and, if not right, I should feel obliged by correction from any of your readers.



The culture of this, and indeed all the bulbous species, with the exception of *I. Persica*, is extremely simple. They should be planted early in October in a bed of any tolerably rich soil, keeping the roots about six inches apart, and about four inches deep, that is, from the point of the bulb to the surface of the soil. They may be allowed to remain in the same place two or three years; but when required to be taken up, it should be done about a fortnight or three weeks after they have done blooming. Keep them on the open ground entirely out of the sun; and the planting must not be deferred longer than possible, or the bulb begins to vegetate, and consequently becomes weakened. The planting of the varieties of xiphium, or Spanish Iris, may be deferred a month after those of xiphioides, as they come up so much sooner: in every other respect the treatment is uniform.

*I. Persica* requires the greenhouse;

it is a very pretty species, and is highly odoriferous. *I. tuberosa* is another very ornamental species; is tolerably hard, and with the same treatment as that of xiphioides will flower freely,

The varieties of English Iris are raised from seed. This should be sown in October, on an east border, sown thin and covered with about an inch of earth; they require no further care, with the exception of weeding, till the third year, when they should be planted out; and when in bloom, which will be the following summer, the good flowers should be marked and the bad ones thrown away.

The iris is a type of an order, the component plants of which are found in nearly every quarter of the globe. Many of them are of great use in medicine; and all of them great favourites with the gardener on account of their beautiful, yet frail flowers.

B. P.

## IXIAS, SPARAXIS, TRITONIAS, BABIANAS, EARLY GLADIOLI, ANTHOLYZAS, WATSONIAS, Etc.

1. *In open borders*.—The beds should be prepared in October or end of September by well digging a spit deep, and burying a stratum of good rotten manure at the bottom. The surface soil should be rendered open by mixing sand with it and being well broken in the digging. The bulbs should be planted in clumps or rows, from  $2\frac{1}{2}$  to 6 inches deep, according to size and sort, the largest bulbs being placed deepest, and each should be covered with sand an inch deep previous to re-covering with mould. Give the bed a southern inclination if possible; keep it free from weeds, and stir the surface occasionally with a fork. In the case of severe frosty weather the bed should be covered three inches deep with dry litter, sea sand, or ashes.

The above under such treatment will flower at different times from May till August.

2. *In pots*.—Either for flowering in pots, or for turning out in the borders in spring. This is perhaps a safer

method to adopt with these half-hardy bulbs than the former.

Let the bulbs be potted in October in light turfy loam and sand, with good drainage. For the strong varieties of Gladioli and Antholyzas a layer of well-rotted cow manure may be placed at the bottom. A frame should be prepared for the pots by placing in it a bed of old dry tan and litter from the stable. Into this let the pots be plunged, the Gladioli at the back, and Ixias, Sparaxis, Tritonias, Babianas, Oxalis, Lachenalias, etc., in gradation to the front. Give plenty of air in fine weather, and withhold water until the bulbs have made root and the leaves begin to appear; it should then be carefully given when there is no danger of frost. If the winter should be very severe, the frame may be banked up with manure or litter, and the lights covered with straw and mats. The pots may be brought into the greenhouse during February, March, or April, according to season for bloom-

ing, or if for out-doors, they may be turned out in March, sooner or later, according to circumstances, that is so as not to be endangered by severe frosts. Under such treatment the *Sparaxis* will flower in April; the *Ixias*, *Babianaa*, *Gladioli*, and *Trito-*

*nias* succeeding each other. After blooming, the watering should be continued until the leaves begin to fade, when it must be gradually withheld. — *Hooper and Co.'s Autumn Catalogue*, 1862.

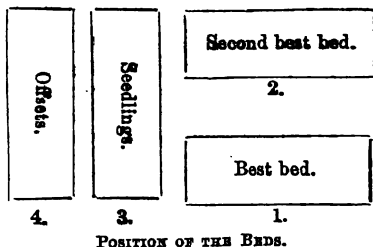
## THE NECESSITY OF DRAINAGE IN THE CULTIVATION OF THE TULIP.

THE object of the subjoined remarks is to point out the advantage of bestowing the requisite attention in the formation of the tulip-bed, and although I am not a tulip-fancier, yet I am sure you will give me credit when I say that gardening operations of all sorts go to make up the amount of my practice. And I have had the opportunity this season of marking the results of the most ungenial spring (as far as the tulip is concerned) upon beds which have been differently constructed.

Five years since I was employed to make four tulip-beds in a good loamy soil, such as produces first-rate wheat, the soil was thrown out two feet deep, and about three feet six inches in width, through the entire length of the beds, then a trench six inches in depth, and the width of the spade, was made all along the middle of the beds No. 1 and No. 2, and made to communicate with a drain which ran parallel with them, and was somewhat deeper than the bottom of the beds—this trench was filled with brick rubble, and then a layer of straw to prevent the soil above from running amongst the brick rubble, and choking the drainage—the beds were then filled in with the soil, previously to which a stout frame of one and a-half inch board was fixed round the beds so as to elevate the surface of the beds nine or ten inches above the ordinary surface of the soil. Nos. 3 and 4, were prepared in exactly the same way as the first two, excepting that no drain was made through them.

These beds have been turned over two or three times right to the bottom, every year since, after the bulbs are taken up, and as silver-sand was liberally used, the first three years at planting time, as well as when the beds were turned, a layer of three or four inches of new stable dung laid all along the bottom of the beds, they have become through the frequent turning, and the thorough incorporation of the above materials with the soil, almost good enough to use for potting soil. It may be stated that Nos. 3 and 4 cross the upper

end of Nos. 1 and 2, so that it might be supposed that the efficient drainage of the first two would operate as effective drains for Nos. 3 and 4.



But did they so operate? Let us see. As I said just now, there has been this year the best opportunity of testing the value of the different beds. In the first place, the season has been most unpropitious for the tulip, which in its native habitats is accustomed to uninterrupted bright weather, from the time it comes up until it blossoms, for we had a leaden, sunless sky all through April, when the stems were rising fast, with a great deal of cold rain. And in the second place the beds Nos. 2, 3, and 4, have had no protection from the rain until coming into bloom. No. 1 has been preserved by means of a covering of mats from the rain which has fallen since they were two or three inches in height. Well, now to the point: No. 1 has suffered scarce anything from canker; No. 2 has fared rather worse in consequence of thorough exposure; Nos. 3 and 4 have had the largest half of their foliage cut away with that pest to tulips, viz., canker; so much are they injured, that it must seriously affect the blooming of the roots for next year. Now it will be evident that the little damage sustained by No. 2 in comparison with Nos. 3 and 4, must be attributed to the readiness with which superfluous moisture was passed away through

the drain; hence the necessity of attention to this matter, when the beds are first made. Hoping these few notes may be of use to some of your numerous readers, I am, etc.

W. CHITTY.

P.S. In report of Tulip Show of Dulwich, you spoke of *Pæctolus* as an old flower. It is a new one, but perhaps you meant an *odd* flower, and the change was a printer's error.

## OCTOBER, 1862.—31 DAYS.

PHASES OF THE MOON.—Full, 7th, 8h. 45m. even.; Last Quarter, 15th, 11h. 41m. night; New, 23rd, 7h. 37m. morn.; First Quarter, 29th, 11h. 44m. night.

| D<br>M | Sun<br>rises. | Sun<br>sets. | Weather near London, 1861. |        |              |     |      | Rain. | THE COUNTRY.                   |  |
|--------|---------------|--------------|----------------------------|--------|--------------|-----|------|-------|--------------------------------|--|
|        |               |              | BAROMETER.                 |        | THERMOMETER. |     |      |       | Rural Sight and Sounds.        |  |
|        |               |              | Mr.                        | Min.   | Mr.          | Mn. | Me.  |       |                                |  |
|        | h. m.         | h. m.        |                            |        |              |     |      |       |                                |  |
| 1      | 6 2           | 5 37         | 29.676                     | 29.562 | 75           | 49  | 61.5 | .14   | Fleabane flowers               |  |
| 2      | 6 3           | 5 35         | 29.987                     | 29.834 | 73           | 40  | 56.5 | .00   | Sundew flowers on marshes      |  |
| 3      | 6 5           | 5 33         | 29.107                     | 30.067 | 71           | 49  | 60.0 | .00   | Elacampagne flowers            |  |
| 4      | 6 7           | 5 30         | 30.056                     | 30.000 | 73           | 39  | 56.0 | .03   | Ragwort flowers                |  |
| 5      | 6 9           | 5 28         | 30.007                     | 29.968 | 73           | 48  | 60.5 | .05   | Golden rod flowers             |  |
| 6      | 6 10          | 5 26         | 30.128                     | 30.068 | 63           | 53  | 58.0 | .01   | Hawkweeds flower               |  |
| 7      | 6 12          | 5 23         | 30.081                     | 29.930 | 72           | 50  | 61.0 | .01   | Ants begin to swarm            |  |
| 8      | 6 13          | 5 21         | 29.836                     | 29.738 | 76           | 50  | 63.0 | .01   | Meadow saffron flowers         |  |
| 9      | 6 15          | 5 19         | 29.888                     | 29.839 | 77           | 41  | 59.0 | .02   | Osmund royal flowers           |  |
| 10     | 6 17          | 5 17         | 29.952                     | 29.578 | 72           | 55  | 63.5 | .18   | Snakeweed flowers              |  |
| 11     | 6 18          | 5 14         | 29.592                     | 29.391 | 71           | 45  | 58.0 | .11   | Sunspurge flowers              |  |
| 12     | 6 20          | 5 12         | 29.965                     | 29.876 | 70           | 50  | 60.0 | .00   | Caper spurge flowers           |  |
| 13     | 6 22          | 5 10         | 29.973                     | 29.876 | 72           | 52  | 62.5 | .00   | Michaelmas daisy flowers       |  |
| 14     | 6 24          | 5 8          | 30.606                     | 29.984 | 80           | 40  | 60.0 | .00   | Blue camomile flowers          |  |
| 15     | 6 26          | 5 6          | 30.096                     | 30.022 | 74           | 41  | 57.5 | .00   | Flocks of linnets and buntings |  |
| 16     | 6 27          | 5 4          | 30.217                     | 30.171 | 63           | 29  | 46.0 | .01   | Squirrels begin to store       |  |
| 17     | 6 29          | 5 2          | 30.260                     | 30.166 | 61           | 35  | 48.0 | .00   | Red berries conspicuous        |  |
| 18     | 6 30          | 4 59         | 30.140                     | 29.997 | 62           | 31  | 46.5 | .00   | Robins begin to sing           |  |
| 19     | 6 32          | 4 57         | 29.970                     | 29.801 | 66           | 34  | 50.0 | .00   | Wren comes to gardens          |  |
| 20     | 6 34          | 4 55         | 29.838                     | 29.775 | 58           | 39  | 48.5 | .00   | Beach leaves redden            |  |
| 21     | 6 36          | 4 53         | 29.767                     | 29.647 | 62           | 38  | 50.0 | .06   | Dormice retire                 |  |
| 22     | 6 37          | 4 51         | 29.758                     | 29.750 | 62           | 42  | 52.0 | .28   | Harvest mice retire            |  |
| 23     | 6 39          | 4 49         | 29.967                     | 29.952 | 61           | 42  | 51.5 | .02   | Flowering-rush flowers         |  |
| 24     | 6 41          | 4 47         | 29.933                     | 29.969 | 62           | 54  | 58.0 | .00   | Sea wormwood flowers           |  |
| 25     | 6 43          | 4 45         | 30.080                     | 30.040 | 63           | 46  | 54.5 | .00   | Heather in full bloom          |  |
| 26     | 6 44          | 4 43         | 30.131                     | 30.032 | 62           | 35  | 48.5 | .00   | Mugwort flowers                |  |
| 27     | 6 46          | 4 41         | 30.075                     | 30.008 | 61           | 42  | 51.5 | .00   | Grouse appear                  |  |
| 28     | 6 48          | 4 39         | 30.065                     | 30.032 | 57           | 36  | 46.5 | .00   | Second broods of caterpillars  |  |
| 29     | 6 50          | 4 37         | 30.003                     | 29.929 | 56           | 40  | 48.0 | .00   | Fire-crested wren              |  |
| 30     | 6 51          | 4 35         | 29.920                     | 29.887 | 61           | 37  | 49.0 | .00   | Fungi on decaying substances   |  |
| 31     | 6 53          | 4 33         | 29.830                     | 28.508 | 58           | 39  | 48.5 | .12   | Caterpillar of dot moth        |  |

## NOTES FOR THE GARDEN.

KITCHEN GARDEN.—Cleanliness will do wonders now for the present and the next season. The more weeds, the more seeds, and less air; so stir the ground between all standing crops, and ridge up the plots that are to be vacant all winter. This is the best season for planting rhubarb. Heap up manures and composts. Empty the muck-pit, where the whole can be

turned two or three times before spring. Plant August-sown cabbage and lettuce in warm situations. Take up potatoes, carrots, beets, and parsnips. Earth up celery. Lay cabbages and broccolis with their heads to the north; fork over asparagus beds, and mulch the crowns with rotten dung. Get cauliflower plants under hand-glasses. Tomatoes not ripe should be cut

in bunches, and put under glass, and kept rather dry, where they will ripen in the course of a week.

**FRUIT GARDEN.**—New plantations of gooseberries, currants, and raspberry bushes may be made towards the end of the month. Canes may be put in to increase stock, and for this purpose two-year-old wood is better than the shoots of the season, if disbudded a foot or eighteen inches from the base. Drain and trench the ground where fruit-trees are to be planted next month. Moss on apple-trees generally disappears when the ground is drained. Root-pruning and planting may be commenced the last week, but root-pruning should only be resorted to in the case of over luxuriant, unfruitful trees.

**FLOWER GARDEN.**—Train out chrysan-

themums in pots, give plenty of water and liquid manure. Plant hyacinths, tulips, crocuses, scillas, crown imperials, lilliums, gladioli, narcissi, jonquils, daffodils, and snowdrops. Part perennials in the borders, get auriculas and carnations under glass for the winter, but give plenty of air. Remove decaying leaves; keep walks and lawns tidy.

**GREENHOUSE AND STOVE.**—Use fire-heat in the greenhouse only to dissipate damp. Remove shading, give plenty of air, and fumigate at once if any signs of vermin. Plants to bloom during the winter should have the best places. Reduce the heat among pines. Keep the air very dry where grapes are hanging. Bottom heat for pines, 85°.

## TO CORRESPONDENTS.

**BOOKS RECEIVED.**—"Der Breuil on the Science and Practice of Grafting, Pruning, and Training Fruit Trees. Kent and Co." A valuable epitome of French practice in fruit culture, admirably translated and adapted for English cultivators, and profusely illustrated. This we must notice at greater length next month.—"The Orchid Grower's Manual. By B. S. Williams, Seven Sisters Nursery, Holloway." This, the best book of the kind, has deservedly arrived at a second edition, and we believe is destined to arrive very quickly at a third or fourth, and so on, for it is a masterpiece in its way, though professedly written for amateur beginners in orchid culture. To those who possess the first edition it is right we should say that the work has been in great part re-written and considerably enlarged. It contains fifty pages more than the first edition, and among the additions are notes on seedling orchids, spot in orchids, best house mode of treating orchids, advice to collectors, cultivation of *Anæctochilus*, and descriptions of two hundred additional plants.—"Select Orchidaceous Plants. By Robert Warner and B. S. Williams." This is a grand illustrated work to be completed in ten parts, at half-a-guinea each, and when complete will make a noble volume for the drawing-room table of the lover of orchids. The plates are magnificent specimens of drawing and colouring.—"The Garden Oracle for 1863" is announced to contain a new list of curious and beautiful bulbous plants with new

modes of culture, and hints on the propagation of rare species, together with the usual descriptions of new plants, and selections of old and new varieties of florists' flowers, fruits, etc.

**CATALOGUES.**—"E. G. Henderson and Son, Wellington Row, St. John's Wood. List of Bulbs, 1862."—"T. Weeks and Co., King's Road, Chelsea. Pamphlet on Conservatories, Greenhouses, Pits, Hot-water Apparatus, and Ventilation; with Remarks, etc." Issued to serve the purpose of a trade circular, but worth having for reference. It contains forty sketches of houses, with brief descriptions, and some useful notes on heating by hot water.—"Hooper and Co., Centre Avenue, Covent Garden. Autumn Catalogue of Dutch, Cape, and other Bulbs."—"Joseph Courchea, Victoria Nursery, Esmond Road, Victoria Park. List of new Fuchsias, Verbenas, and Chrysanthemums."—"W. Cutbush and Sons, The Nurseries Highgate. Descriptive Bulb Catalogue for 1862." A most interesting catalogue; contains some useful cultural notes on hyacinths and mushrooms, the latter in connection with the announcement of the famous mill-track spawn used with so much success by Messrs. Young and others.—"Osborn and Sons, Fulham, near London. Catalogue of Hardy Trees and Shrubs; Catalogue of Fruit Trees; Catalogue of Herbaceous Plants; Selected List of Plants." Among the novelties announced are *Osmunda regalis cristata*, a beautifully crested royal fern, and the Stirling Castle Peach.—"B. S. Williams, Paradise Nursery,

Seven Sisters' Road, Holloway. Catalogue of Hyacinths, etc."—"E. Taylor, Malton, Yorkshire. Catalogue of Dutch Roots, Fuchsias, Cinerarias, etc." One of the seedling *Tropæolums* from Oulton, called "Beauty of Oulton Park," and described as superior to *Elegans*, is announced as ready for distribution.—"Barr and Sugden, King Street, Covent Garden, Catalogue of Dutch and Cape Bulbs, etc." A capital list of useful things, and one that every gardener may consult with advantage.

**SCALE.**—*W. H., Bolton.*—This is the most hateful and stubborn of all the pests to which plants are subject, and if it gains ascendancy in the stove it is almost impossible to eradicate it. You do not say what sort of plants are affected, so we must speak generally on the subject. With hard-wooded plants the first thing to be done is to brush the stems and branches with a hard brush. Another step in the process will be to brush the stems of all plants likely to bear the application, with spirits of turpentine, which must be brushed into all the crevices of the bark where the scale insect usually broods over its eggs. Plants of delicate structure such as ferns, which cannot be brushed, must be shut up close in a box with a vessel of boiling water, on which is placed a saucer full of turpentine. The heat will cause the vapour of the turps to rise amongst the plants, and the scale will be destroyed. These remedies are to be repeated; however effectual or otherwise they may prove at first, one operation should never be trusted in the eradication of vermin. There is another plan which we keep till the last, because it is not yet established in the books, and may by some be still considered as quackery. It is the use of sweet oil, which is certain death to vermin of all kinds. The truth must be said of oil that it makes the plants look miserable for a time, and every leaf it touches will perish. But it does no hurt to the bark of trees and shrubs, and we not long since saw one of the best collections of succulents near London treated with oil throughout, which cleansed them of scale completely, and the plants the next season made a very vigorous growth, though immediately after the application of oil they had a very sorry appearance. It may be right to add that insects breathe through apertures in various parts of the body, and oil closes these, and causes their death by suffocation. No insect will survive being thoroughly wetted with oil.

**HYDRANGEAS.**—*H.*—These rarely do much good as border shrubs, partly because ordinary garden soil does not suit them, and partly because this climate is a trifle too cold. In the Isle of Wight they grow finely as hardy shrubs. Our advice on your plants is that you destroy them, and in future depend on pot plants. If you would prefer to make the best of them in the open ground, we should advise covering them with a cover of coal-ashes till April, then take them up and remove the soil to the depth of eighteen inches, and plant them directly in a mixture of turfy peat and thoroughly rotten dung, equal parts, well mixed previously. They ought to have the warmest position in the garden, but some shade and abundance of water all the summer.

**TRENCHING.**—*A. B.*—You will generally see appended to recommendations and descriptions of trenching these words, "and the crumbs." The labourer is expected to shovel out the crumbs remaining after he has thrown out the second spit, but whether spade or shovel should be used would depend on the nature of the ground. If tenacious, the spade would be the best to take out the crumbs, and if loose the shovel. Nine workmen in every ten will take a tool in hand, and with that cut the spit and throw out the crumbs too. Your letters to our private address were received, and are now somewhere in a heap of communications we have not had time to reply to. When we can find them they shall have attention. We must say now on this matter that all letters addressed to the *FLORAL WORLD* are attended to promptly, but if sent to us privately they are apt to be put aside for a moment of leisure which never comes. Besides this, it is objectionable to supersede the usual public medium of correspondence. In fact, if we agree to answer all the letters sent us, we might as well discontinue this work and give up all our time to answering individual inquiries. We have made no resolve not to answer such letters, but they have increased so much of late that we have been compelled to put them aside, and there they lie waiting for an opportunity. We repeat that letters sent to 5, Paternoster Row, in the usual way, will be dealt with on the same terms as heretofore, that is with a desire on our part to be courteous and communicative.

**ROSES.**—*R. U.*—Your letter was put aside to be replied to through the post as you wished, and has just come into our hands again. In cutting a rose or any other

plant which it is desired to throw into a rooting state, a small portion of bark should be removed, the wood need not be cut at all, cut through the bark to the wood and remove a small slice of bark from one side of the stem only. When we said cut a notch, we described the usual way we proceed ourselves. We do cut a notch, and perhaps a bit of the wood is taken out with it, but if we are pushed to define the affair nicely, then we say the proper way is to cut to the wood only. Cocoa-nut fibre refuse will do as well for rose cuttings as anything. We get ours from Mr. Barham, of the cocoa-nut fibre works, at Kingston, Surrey. He will send you a three bushel bag for 1s. 6d., and you can make arrangements as to the price of larger quantities.

**LILIUMS IN POTS.**—*Lily.*—The soil we have found most useful for growing pot liliums is the yellow loam from Wanstead, without a particle of sand or leaf with it. But it is not everybody can get that material. It is of a friable silky texture, always crumbles to dust when handled in a nearly dry state, and never becomes a pasty mass even when very wet. As it comes to us full of turf, it only needs to be stacked up till the turf is rotten, and then it does for potted trees of all kinds, roses, gladioli, and whatever else is worth potting in a material that costs us twenty shillings a load including cartage. If we could not obtain such loam we should get turfy peat and sweet leaf mould, and use a compost of equal parts of those two materials for liliums, and sand only around the bulb in planting. In our rhododendron beds, which are filled with the loam described above, and turfy peat of equal quantities, all the Japanese liliums grow like weeds, flower superbly, and increase fast enough to show that that mode of growing them would pay as a commercial undertaking, and we could increase them still faster by nipping out the flowers so as to induce the flower-stems to form little bulbs in the axils of the leaves. If manure is used for liliums, it should be about a fifth part to the whole bulk of dung, rotted to dust; manure only half rotted would do mischief.

**BEGONIA REX DISEASED.**—*W. B. A.*—You ask why the leaves of Begonia Rex wither down? Now that is not a fair question; we might write to a doctor and ask him why we have a pain in the elbow of the left arm with as much chance of obtaining a satisfactory reply. We must ask in return, are the plants in the stove, the greenhouse, the

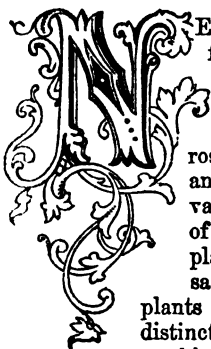
drawing-room window, or the open air. Perhaps the compost is too pasty and rank; perhaps, and very likely, the drainage is imperfect; perhaps, and still more likely, the plants are in too cold a place; perhaps, and still more likely than the last, you are careless in watering, and wet the leaves too freely. Begonias like warmth, shade, and a damp atmosphere, a peaty compost, and never a drop of water on their leaves. All leaves densely clothed with pubescence evaporate moisture rapidly, as generally they absorb largely from the atmosphere. When water is thrown on the leaf, the rapid evaporation, owing to the many surfaces of the hairs which are exposed to the atmosphere, causes a sudden cooling of the surface of the leaf almost to freezing point, and the consequence is a burnt or withered appearance. We have seen a good collection disfigured by a shower from a syringe when the sun was shining, and the ventilators open, and where each drop fell the leaves were marked as if sprinkled with burning coals.

**VARIOUS.**—*W. B., Ashton.*—Many notices on vine culture may be found by consulting the indexes of former volumes. There are articles on the subject in the numbers for December, 1858, February and April, 1860.—*Miss W., Londonderry.*—Both the subjects named will shortly be treated upon. At this season they would be of little value or interest.—*A. B., Nantwich.*—We shall give full lists of roses shortly.—*G. S., Renfrew.*—The papers were written for this work, and are not likely to be republished in any other form. They will probably be resumed when the hurry of the season declines, practical men have very little time for writing during the summer.—*J. E., Tipperary.*—Clematis and passion flower in a greenhouse, may be cut down in March, long before which time we will treat the subject in detail; we have made a note of it.—*Commeiina.*—You can always keep the rose well furnished, by occasionally cutting out to their base shoots that have flowered; this will cause new rods to break from the bottom. The strong shoots of this season will flower next year if the wood is well ripened now. Do not cut it at all till March, and then only so much as will allow of of it being trained in neatly, at the same time slightly shortening the longest rods. Roses will root quickest in water in an opaque vessel in shade and warmth, but it is a bad way to increase them.—*C.*—You must send at once to get an advertisement in GARDEN ORACLE.

THE  
FLORAL WORLD  
AND  
GARDEN GUIDE.

---

NOVEMBER, 1862.



NEW ROSES do not always prove themselves good the first season of their flowering, and very often they do not bloom at all in the amateur's rosery until they have made two seasons' growth. If we were to select some one particular rose, and distribute plants of it to rose-growers living in a dozen widely-separated districts, and demand from each a report as to the behaviour of the variety, we should probably have as many different estimates of its value and descriptions of its character as there were plants and growers selected for the decision. It is the same with everything else, but more particularly with plants that differ from each other by nice shades and small distinctions; and the reason is that every plant requires a certain combination of circumstances to bring it to perfection. Where the soil suits it the air may not, and *vice versâ*; the place may be too cold in spring or too hot in summer, too damp or too dry; and so with all the popular subjects of garden culture, seasons and localities affect them very differently, and the variety that is invaluable in one place may be worthless in another. We noticed this particularly during the past summer. Knowing the old Cape aster as a favourite rock plant, we gave a welcome to Mr. Bull's variety of it, sent out as *Agathea celestis variegata*, but very few people have done much good with it. At Victoria Park it only flowered freely where it had run back and lost the variegation, at Kensington it was a third rate plant, at Crystal Palace ditto, in our own garden it grew rank and flowered poorly in the borders, but did better on the face of a rockery; but at Kew we found it in splendid trim, making a close surface of beautiful foliage covered with abundance of pretty blue flowers. It is the same with geraniums, verbenas, and indeed with bedding plants of all kinds, and, to return to the subject we have most in mind just now, it is the same with roses. Our excellent correspondent "Prior" says Louis XIV. is of no use; we thought so for some time after it first came out, but we waited, gave it time, and this season we have had it in bloom in the open ground and under glass, one of the most perfect gems in our collection. Soil, situation, climate, and (never

forget this) cultivation are all important matters when we are to determine the relative value of any particular rose. The many strange ways in which roses behave is the best argument for the use of briar and Manetti stocks, the first for damp fat soils, the second for poor dry soils, though the Manetti likes water and manure if it can get them as much as the briar. Though every rose has its own peculiar constitution, whether on its own or foster roots, it is nevertheless true that a larger selection of worked plants can be grown on the same soil side by side, than would be the case if the cultivator persisted in having all on their own roots; though, wherever the circumstances are unfavourable to the cultivation of the rose, we would always prefer own roots, though they are so much longer making fine bushes than on any of the various stocks used for the purpose. But so completely has the Manetti been adopted at all the nurseries, as the only stock thoroughly well adapted for raising large quantities of the new roses to be sent out at cheap rates, that we must be content, in most cases, to make our first acquaintance with the new comers on Manetti roots, and our business will be to get them on their own roots for ourselves, an easy matter enough, on which abundant information has been given in these pages. The principal difficulty the amateur will have to provide against is the gradual conversion of roses into Manettis by a process of "natural selection." The roses are planted, the heads grow for a time slowly, perhaps because the work is left above ground, whereas it should be covered with at least an inch of soil, or perhaps because before turning out they were not well hardened, or the work was not well healed over. By and by, as Manetti is nothing if not vigorous, up steals most insidiously a sucker. It might need the eye of a magician to determine that the rose has now two kinds of shoots. Ask an experienced rose-grower to separate Manetti suckers from the true shoots of a plant of Alphonse Karr, August Mie, Triomphe de Beaux Arts, or Panache D'Orleans, and it may puzzle him to do it; no wonder then that amateurs sometimes complain that a rose which used to bloom well has ceased to bloom altogether, for the rose is perhaps gone and its place supplied by shoots from below the collar. The first thing, then, for the amateur rose-grower to do is to know how to distinguish Manetti from all other roses; and if there is any difficulty at first a comparison should be made of the full grown leaves and of the shoots that are to be compared, and if there is any difference in the venation of these the point may generally be settled by tracing each to its source, the *rogues* will be found to issue from below the collar, and must be cut clean away to the base. Gloire de Rosomenes is so like Manetti in foliage, that when worked on the latter it is one of the most likely of all to undergo this unhappy transformation, and the leafage of each is so nearly the same, that it is no easy matter to distinguish them until the leaves of each are full grown.

Bearing these several points in mind, let us see how the case stands with the new or nearly new roses. There is a host of high-coloured roses in the catalogues, most of them good, but generally very much alike. We do not know one of the General class which, *all points considered*, is superior to that magnificent variety. Grow *H. P. General Jacqueminot* on its own roots on a good rose soil and it will give blooms during seven months of the year; we have cut blooms on the first of June and on the first of January out of doors, and from the middle of June to the middle of October it blooms almost continuously, and when half expanded has no



equal. Its great defect is want of doubleness, and that very defect is the cause of its fertility of seed-pods, and hence the number of seedlings which have been raised from it. One of this strain, more double, of equal substance, and as fine a habit, is *Beauty of Waltham*, which we recommend every rose-grower to possess forthwith, for its day of trial is over, and it is proved to be of first rate excellence. *Gloire de Santhenay* we gave a good character when it first came out, we can say now that its character is settled, and it stands almost alone for the brilliancy of its large flowers, which in dull weather have a glow upon them very closely approaching to scarlet. This is one of the most robust of growers, and well adapted for use as a pillar rose. *Adolphe Noblet*, *Charles Lefebvre*, *Eugene Bourcier*, *François Lacharme*, *Marechal Vaillant*, *Olivier Delhomme*, *Professor Koch*, *Senateur Vaisse*, *Souvenir de Lady Eardley*, *Triomphe de Lyons*, *Turenne*, and *Victor Verdier*, all of the scarlet crimson class, are well worthy to keep the place they have had assigned them amongst the very best of the crimson roses, but they each have their several points of excellence. Charles Lefebvre is a show rose with the habit of the Geant, as free blooming, not given to mildew, and if all the side-buds are removed, the top-buds open like Madame Damage for size and make, and like the General in colour. François Lacharme is a magnificent gem, but variable. During the hot bright days in the middle of August we thought it rather wanting in substance, but when the air was moist and cloudy we could find nothing to surpass it in the exquisite shading of its predominant carmine tint into a soft red of the same tone as Madame Laffay.

Those who know Paul Ricaut, a lovely Bourbon which blooms but once, but is the most beautiful of summer roses, will appreciate the beauty of Marechal Vaillant, which is of the same make and colour, with half a shade of scarlet added, so that in this rose we have a sort of perpetual Paul Ricaut, not certainly a continuous bloomer—there are few except the Chinas that can be so described—but blooming twice abundantly if slightly pruned back when the first bloom is over. It is a fine rose to show in single blooms, on account of their size and character. Olivier Delhomme is a good grower, not large, quite double, brilliant scarlet red, and rather shy, but will never disappoint under pot culture. In the open ground it appears to be rather delicate, but in that respect may improve, for all new roses are delicate for a year or two, in consequence of the driving system of propagation to which they are necessarily subjected. Professor Koch is a thorough show rose, cupped petals, colour deep crimson, rich and substantial, but apparently not a free bloomer, certainly not so with us, and of more consequence to the exhibitor than for making a display in the garden. Of Senateur Vaisse we have, perhaps, said enough in former notes on roses; it is the best rose of 1860, and in 1862 put in an appearance at the exhibitions rather damaging to some of the new roses then brought forward for the first time. The colour of this rose is not remarkable, that is to say, comparing it with others of its showy class. It is a dazzling rose, with more of scarlet in it than the General, and so far will always satisfy the lovers of colour. But it has a splendid habit of growth, a grand foliage, the flowers are extra large and very double, with great depth of petals, and there is not a rose in our gardens that keeps its character so long after being cut. It will hold together ten days in a cool place in a phial of water. Without Senateur Vaisse no rosarian dare boast of his possessions. Souvenir de Lady

Eardley is but second-rate, it lacks substance and fulness, but is beautifully rich and velvety, and on some strong soils will probably prove a great acquisition. The petals have great substance, and the form is nearly perfect. *Turenne* and *Brilliant* are dazzling roses, the last-named intensely rich, and a sort of perpetual *Brennus*, double to the centre, and both are good for show as single flowers, being bold in form and extra large, with not a trace of coarseness about them.

Red roses have been added to in a very satisfactory way. Amongst the novelties in this class we have been charmed with two already frequently recommended in these pages, *General Washington* and *Victor Verdier*. We are prepared to match these against any in the lists to give a continuous abundance of flowers of good quality, the first unequalled in beauty, the other only second-rate as to quality. Hitherto *Victor Verdier* has been placed in the front rank, but it cannot hold the place assigned it, it is not equal to the demands of the day either in colour or form, but it will be popular because it is covered with blooms all the summer long. For the rosery it is invaluable; for pot culture and exhibition not very desirable. On the other hand, *Washington* is a noble flower, and a fit souvenir of the great patriot whose name has been so perversely honoured by his children. It is described in the catalogues as "brilliant rosy crimson," but no pen or pencil can describe the peculiar lustre it has when in its prime; half expanded, and with the sky somewhat cloudy, it is then a gem of the first water, and at all other times a first-rate rose, a vigorous growth, and as free as any good rose we possess. *Emile Dulac*, deep rosy red, nicely cupped, very large and double, is an acquisition to this class, a fine show rose, but not a free bloomer. *John Hopper*, an English seedling from the bleak east coast, rosy crimson in the centre, shading into rose at the margin, and the under side of the petals tinged with lilac, a beautiful flower, variable in character, second-rate in quality, wonderfully hardy, and will be as useful to the amateur as that finest of red roses, *Jules Margottin*. *Madame Boll* is the best of the new roses of its colour, brilliant rose, perfect shape, large, cupped in the way of *Baronne Prevost*, and well suited to compete with the *Baronne* to show as single flowers. The enthusiastic connoisseur will be delighted with this noble flower. *Madame Boutin* is more in the way of *Jules*, and, unlike *Jules*, which blooms in distinct efforts at long intervals, *Madame* is as nearly a continuous bloomer as any of the so-called perpetuals, and is good to the last, thoroughly double, and perfect in form. *Madame Clemence Joigneaux*, rose shaded with lilac, very large and globular; *Notre Dame de Fourvieres*, salmon blush, large, globular, nearly single habit, vigorous; and *Paul Féval*, rich deep rose, wind up the list of really good new roses of the red and cherry-coloured class. If we mention others, it will be but to slight them, and it will suffice that in these last-named we have distinct forms of excellence, the two first show roses, the last a second-rate rose, well worth a place in the rosery.

Dark roses are invariably deficient; what we gain in depth of colour we lose in form and substance. The two best we know among the novelties of this class are *Louis XIV.* and *Lord Clyde*; the last was exhibited by Messrs. Paul and Son at the Regent's Park and Kensington Shows during the present season, and was duly reported in these pages. *Louis XIV.* is a gem peculiar in colour, once seen in its prime, never to be forgotten. It is described in the catalogue as "velvety crimson," its proper colour is purplish crimson, with a glow upon it as of sunshine

passing through a purple silk; say, for the sake of simplicity, claret-coloured. It is not a massive rose, and it is a weak grower, whatever it comes to in the open ground, and in that respect we are satisfied with it, for pot culture it is most distinct and beautiful. *Jean Bart* is another of the same class, but with one more shade of purple. This, too, is neither a large nor a full rose, but nevertheless beautiful. *Alphonse Damaizin* is a show rose of the darkest shade of crimson, small, with thick velvety petals, and most beautiful when fully expanded. *Comtesse de Segulier*, crimson, shaded with purple, second-rate. *Madame Julie Daran* is worthy to have companionship with Alphonse Damaizin and Lord Clyde; the colour is crimson scarlet, shaded with purple, occasionally deepening to black, as in Cardinal Patrizzi, the flowers are extra large, and the form unimpeachable. Here we have a perpetual Napoleon to put that fine old Gallica out of countenance, or at least divide honours with his imperial majesty. Those who care about dark roses—and they are not of much account in the open ground—should secure this charming variety, which is of the most robust habit, and has a splendid foliage. *Souvenir de M. Rousseau* is so like Alphonse Damaizin that we cannot describe both as indispensable: the last is a show rose, rather shy, a good grower. The colour of M. Rousseau is carmine shaded with purple, and in form is scarcely equal to A. Damaizin. We must leave our friends to judge between them, and if they adopt both there will be no harm done.

Of the darkest shades of colour we are bound to speak well of *Henriette Dubus*, violet purple, imbricated like Madame Vidot, a profuse flowerer, and sweetly scented as Madame Damage or the good old cabbage. *Monte Christo*, intensely dark violet purple, the best purple rose produced, and fit for show anywhere, a triumph of breeding, and a good habit of growth. *Praire de Terre Noire*, dark crimson, shaded with violet, second-rate. *Prince Camille de Rohan*, nearly black, a remarkable rose, a gem under glass or in the rosery, and blooms freely when young. *Reine des Violettes*, like William Lobb, but a seedling from Pius IX., thin, open, flabby, yet worth having for a pillar or wall, and best seen in full sunshine.

Among the curiosities, we may name as worthy of some attention, *Belle Brune*, violet, shaded with white, third-rate. *Madame Desire Giraud*, creamy blush, striped with crimson, occasionally very pretty, but fitful, and to be taken by the grower at his own risk. *Madame Eugene Verdier*, pale flesh, with rosy centre, compact, small, pretty, second-rate. *Triomphe d'Amiens*, deep lake, striped or mottled with crimson, the best striped rose yet brought out, but sometimes not striped at all, and then as good as when it comes true. To sum up the list, we have one good white rose added to the few already established—*Louise Darzans*, French white, large and cupped, of perfect shape, and many degrees better than that good old white, Dr. Henon. It is impossible to say which amongst the best or worst are to be preferred for any particular garden. The rose-grower must discover for himself the varieties best adapted to the circumstances under which he pursues the culture of the rose. We are constantly assured that nowhere on the north side of London does General Jacqueminot grow and bloom so superbly as with us, and some of our rose-growing friends go so far as to hint that we manage it by a method which we keep secret. Whatever we know about that or any other flower is at the service of our readers, and we can only conclude from this particular case, that the soil and the climate are just what the variety requires.

## DU BREUIL ON FRUIT-TREE CULTURE.

We have very great pleasure in introducing to the notice of our readers a recently published translation of a valuable French treatise on the grafting, training, and pruning of fruit trees.\* Respecting Mr. Wardle, who is represented to have "adapted" this work for English cultivators, we have no knowledge whatever. He may be related in some way or other to the personage of the same name who figures in the "Pickwick Papers," or he may be a myth. But that scarcely matters,

cleverly illustrated; and though English gardeners will not be able to carry out all the modes of culture suggested, they cannot but make advances in their art by becoming acquainted with the practice of the leading French pomologists. Du Breuil is especially good in his instructions on the renovation of aged trees, the clothing of the stems of peaches and nectarines, which, through injudicious pruning, have become naked in the centre, and the gradual replacing of the entire furniture of large



Fig. 1.—Peach Palmette Form, First Year.

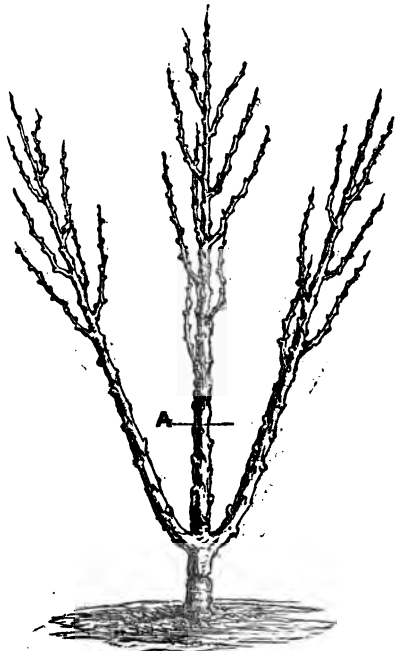


Fig. 2.—Peach, Second Year.

for Du Breuil requires but little adaptation, and somebody has translated the work in a very creditable manner, so we have the treatise in its integrity, and have every reason to be grateful. The various modes of grafting, pruning, and training are described in an explicit manner, and very

trees by regularly laying in new wood, obtained by the insertion of grafts, or the practice of scientific pruning. The amateur fruit cultivator will find the perusal of this work a thoroughly pleasant recreation for the long nights that are now coming, and we hand it over to the gardening community conscious that none who take it in hand will be disappointed. The volume contains 228 pages, and 191 woodcuts. There is not a page wasted in needless disquisition; it is business-like throughout,

\* "The Science and Practice of Grafting, Pruning, and Training of Fruit-trees, illustrated. From the French of M. Du Breuil, adapted for English cultivation, by W. Wardle, Nurseryman."—Kent and Co.

and the author is evidently nothing if not practical. As an example of the style and mode of treating the subject, we subjoin an extract on the—

#### PALMETTE TRAINING OF THE PEACH.

*Planting.*—The trees must be planted at such distances as to cover a medium of about twenty square yards of the wall ; thus, for a wall three feet and a-half high it will be necessary to plant about six yards apart.

*First Pruning.*—Pears and other trees of the same species, ought not to receive

mediately above this latter bud, at the point D, that the stem must be cut. The buds B are intended to form the first side-branches, and the bud A the extension of the stem.

The buds selected for the extension of the stem and for the side-branches should be as much in front as possible ; by this means the slight deformity at each point, from which the new extension springs, is less apparent, and the place of the cut is better shaded from the sun, and more readily heals.

During the following summer the de-

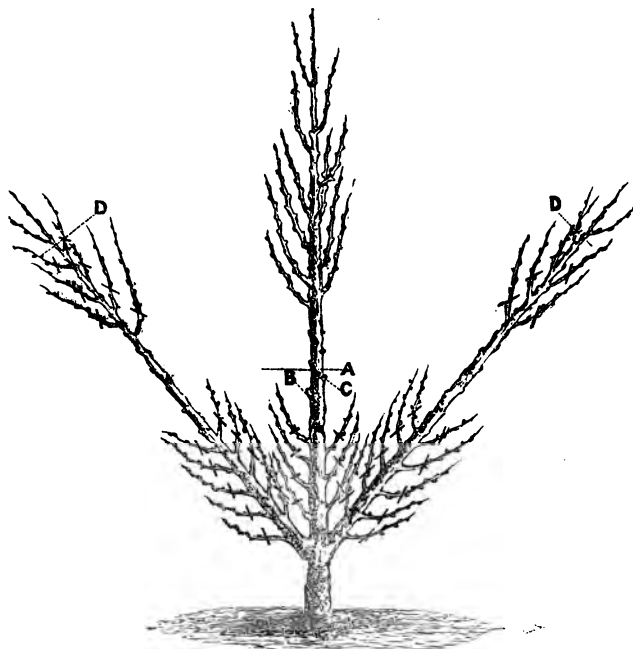


Fig. 3.—Peach, Third Year.

their first pruning until they have struck root, that is, about a year after planting ; the peach, however, must be pruned the same year that it is planted, otherwise the buds at the base of the stem which should be developed in shoots would be completely withered by the following year.

The first pruning has for its object, to develop towards the base of the tree the first two side-branches, and to obtain a new extension of the stem. To effect this, select two lateral buds, B (Fig. 1), situate about twelve inches from the ground. Also the bud A above and in front ; it is im-

velopment of the three buds must be watched ; if other branches grow upon them they must be pinched when they have grown to six inches, and be suppressed entirely when the reserved shoots have attained a length of sixteen inches. The side-branches must be maintained at an equal degree of vigour by the means described in the chapter on the PRINCIPLES OF PRUNING.

*Second Pruning.*—Figure 2 shows the result of the operations of the preceding year. At the second pruning, about the third part of the length of each side-branch.

must be suppressed, selecting for the place a front bud suitable for the new extension. The main stem is cut at A, about twelve inches above the spring of the side branches, and immediately above a front bud. The stem might be cut higher up with a view to another set of side-branches during the summer, but it is more prudent

is necessary to keep them in the same degree of vigour. The other buds must be treated as before described (p. 146), in order to transform them into fruit branches.

*Third Pruning.*—At the third spring the young peach tree will resemble Fig. 4. The main stem must now be cut 24 inches above the spring of the side branches

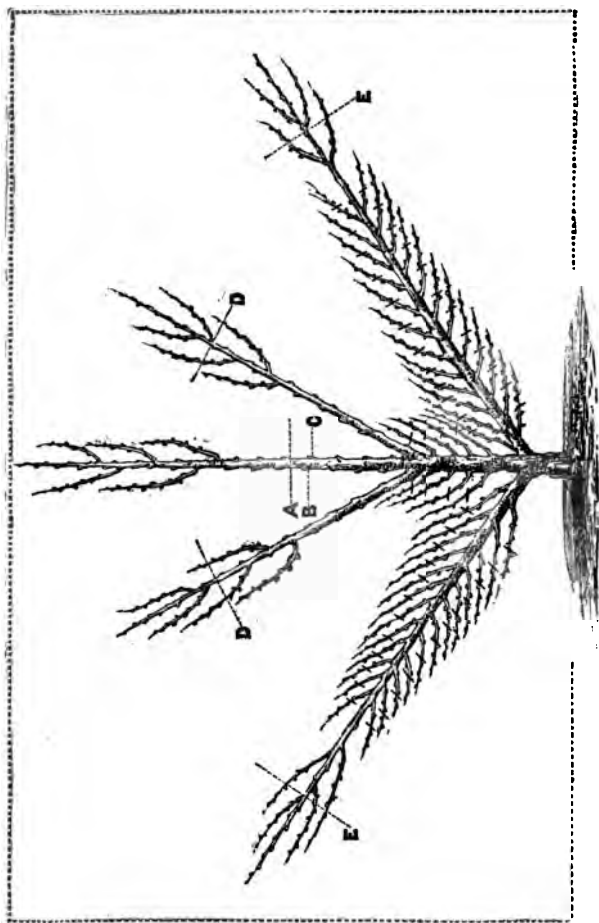


Fig. 4.—Peach, Fourth Year.

to allow an interval of two years between the formation of the first and second sets of side-branches. By this means the growth of the lower branches will be best promoted, they having always a tendency to be less vigorous than the higher ones.

During the following summer the terminal buds must receive such attention as

at A, above the two side-buds B and C intended to develop two new side-branches, and a bud in front to prolong the main stem. The side-branches must be cut back about one third of their new growth at D, in order to make them develop all their remaining buds.

In pruning the side-branches it is of

importance to give the same length to each of the parallel branches, in order to maintain an equilibrium between both sides of the tree. If one side-branch has become stronger than the corresponding one it

same treatment must be applied to the principal shoots as in the year preceding.

*Fourth Pruning.*—The result of the operations of the previous year are a new set of side-branches, as shown by Fig. 5.

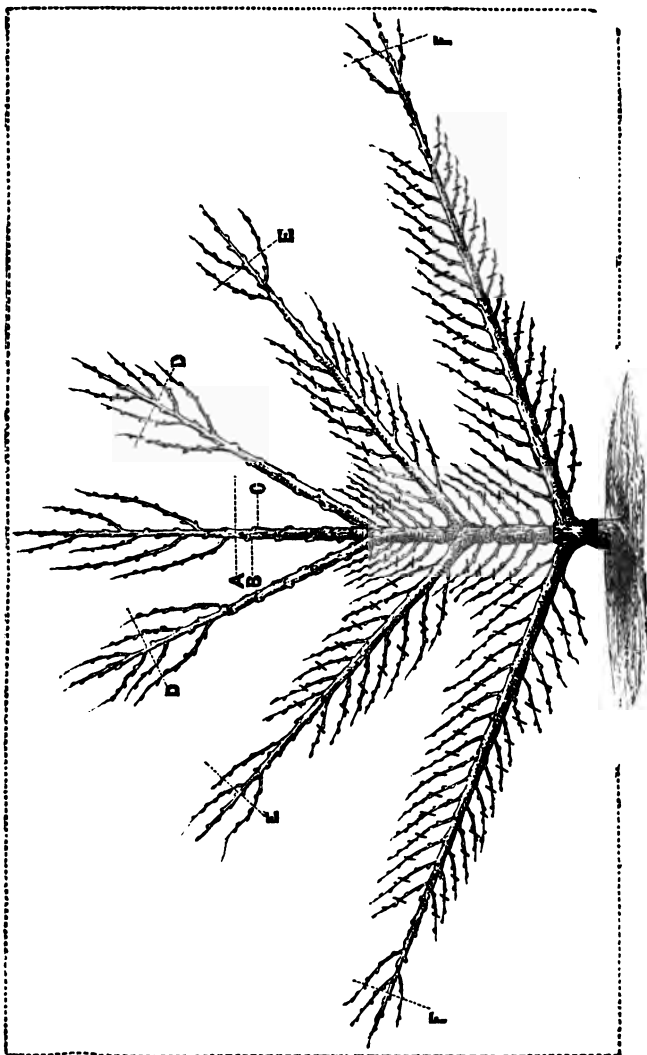


Fig. 5.—Peach, Fifth Year.

must be cut rather shorter. The fruit branches growing towards the lower part of the tree must be treated as described further on.

During the whole of the summer the

These must be cut back about a third of their length at D; and the new growth of the lower side-branches must also be cut back one-third at E. The new extension of the main stem must be cut at about 24

inches above the spring of the upper side-branches at A, so as to obtain, by means of the buds B and C, a new set of side-branches. A new series of side-branches may, from this period, be obtained every year, for the lower side-branches have now acquired sufficient strength to draw to themselves all the sap which they require for their continued growth. The summer treatment is the same as before.

*Fifth Pruning.*—A third set of side-branches have grown during the preceding summer (Fig. 5). The new extension of the side-branches must be cut back as in previous years. The main stem must be cut at A, and a new set of side-branches obtained from the buds C and D, the remaining treatment as before.

The operations we have described must be continued from year to year, in order to obtain new side-branches and regular extensions of them, until they acquire the desired length, when their ends must be directed upwards, until each of them attains the summit of the wall. Towards the tenth or twelfth year the trees treated in the manner we have described will assume the aspect of a regular palmette, with this difference—that the fruit-branches are distributed on each side of the wood-branches, as shown at Fig. 5.

*Nailing-up.*—If it is not wished to fasten up the branches with listen, it may be done by forming a trellis. It

is necessary to fasten up not only the wood branches of peach trees, but as we

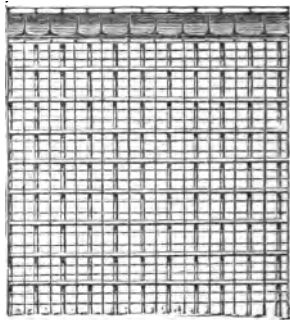


Fig. 6.—Trellis of Wood and Iron for Peach.

shall see further on, the fruit-branches after the winter pruning and the lateral shoots during the summer. As the points where fastenings are required are very numerous, the trellis bars must be rather close together, and for this reason it will be expensive if made altogether of wood. A wire trellis will be preferable having spaces of 32 inches between each of the horizontal lines. If there is already upon the wall a wooden trellis, with wide squares, it may be used, dividing the squares with lines of iron wire (Fig. 6).

## OUR OWN SELECTION OF HYACINTHS.

### BEST TWELVE NEWEST HYACINTHS.

*Reine des Jacinthes*, deep rosy carmine, large and elegant bells, and bold spike. 5s.

*Pelissier*, similar to the above, but one shade darker in colour. 10s. 6d.

*Duc de Malakoff*, flesh with rose stripe, one of the finest of intermediate colours, bells and spike first-rate.

*Paix de l'Europe*, pure white, large bells, spike compact. 7s. 6d.

*Sir Bulwer Lytton*, double, white or cream, very massive, and quite a telling variety. 21s.

*Koh-i-Noor*, semi-double, reddish-pink, very lively and effective, but the spike rather crowded and confused. For colouring we know of nothing to equal this when skilfully bloomed. 21s.

*Snowball*, pure white, the finest-formed hyacinth known. 21s.

*Miss Burdett Coutts*, creamy blush, the substance waxy, the bells massive and beautifully proportioned, but rather too far apart on the spike. This is indispensable in a first-class collection. 5s.

*Florence Nightingale*, single, pale pink with carmine stripes, large bells, crowded spike, very cheerful and effective. 10s. 6d.

*Milton*, single, deep shaded crimson, immense spike; one of the most useful varieties of recent introduction; it will never disappoint. 10s. 6d.

*Ida*, the best yellow out. 10s.

*Blackbird*, the best black, handsome glossy bells, spike well proportioned.



**TWO DOZEN OF THE BEST MODERATE-PRICED HYACINTHS FOR POT CULTURE.**

*White*.—Alba maxima, pure white, broad segments. 3s. 6d. to 5s.

Bridal bouquet, beautiful spike. 1s.

Madame Van der Hoop, immense bells and majestic spike. 2s. 6d.

Mont Blanc, pure, long spike. 1s. 6d.

Oron dates, large bells. 2s. 6d.

*Blue*.—Argus, bright blue, white eye, lively and distinct, fine spike. 3s.

Baron von Tuyll, dark blue, long and handsome spike. 1s.

Grand Lilas, porcelain, a lovely colour and first-rate flower and spike. 1s.

Couronne de Celle, azure, fine. 2s.

Charles Dickens, greyish-blue. 1s.

Mimosa, dark blue, extra fine spike. 1s.

*Blush and Lilac*.—Noble par mérite, double blush rose, most beautiful. 7s. 6d.

Elfrida, creamy blush, large bells. 1s.

Tubiflora, face of flower blush-white, tube mauve, curious and beautiful. 1s.

Grandeur à Merveille, pale blush, large bells. 9d.

L'Unique, purplish mauve, very pretty. 1s.

Keizer Ferdinand, lilac with mauve stripe, extra fine. 1s.

*Red*.—L'Étincellante, shining crimson. 1s. 6d.

Cosmos, rosy pink, long spike. 2s. 6d.

Lord Wellington, salmon with carmine stripes. 1s.

Lady Sale, dark red shading into purple. 1s. 6d.

Norma, waxy-pink, large. 1s.  
Von Schiller, salmon-pink, grand spike. 3s.

*Yellow*.—Anna Carolina, primrose. 2s.

*Black*.—Prince Albert, purplish-black, large bells, fine. 9d.

**ONE DOZEN FOR POTS OR GLASSES.**

*White*.—Grand Vainqueur, 9d.; Madame Van der Hoop, 2s. 6d.; Queen of Netherlands, 1s.

*Blush*.—Grandeur à Merveille, 9d.

*Lilac*.—L'Unique, 1s.

*Blue*.—Baron von Tuyll, 1s.; Bleu mourant, 6d.; Grand Vedette, 1s.

*Red*.—Duchess of Richmond, lively pink, 1s.

Robert Steiger, bright red, 1s.; Norma, 1s.

**A POOR MAN'S SELECTION OF NAMED HYACINTHS.**

These are sixpence to ninepence each, and all are good for either glasses or pots.

*White*.—Grand Vainqueur, Queen Victoria, La Tour d'Auvergne.

*Blush*.—Voltaire, Anna Maria, Triumphant Blandina.

Though the bulb catalogues are, upon the whole, very carefully got up, they are like all other trade circulars—they range so far and wide that people of moderate views and moderate means are puzzled how to be led from them, unless they know as much of the varieties as the nurserymen themselves. To assist such is the object of this selection, which has been made with great care, and includes only those varieties which we know to be adapted for the purposes for which they are recommended.

**THE FRIENDS OF MY YOUTH—WHERE ARE THEY?**

"Ah, where are they?" I involuntarily ejaculated, after reading the interesting lucubrations of "Fido Fides," in the September number of the FLORAL WORLD. As he very properly observes, "Mowing grass and the management of bedders is the beginning and the end of the practice of gardeners in these days." Well, in a

great measure it is; there is far too little attention given to the culture of a vast number of things which were made to be admired, and which, to an enthusiastic mind, contribute a vast amount of successional pleasure. My memory very easily recalls the names of some whose being was wrapped up in the herbaceous treasures of their

garden, whom a fine day in January would set on the *qui vive*, looking out for the blossoming of *Kranthis hymalis*, and hailing with delight any stray snowdrop or crocus that might be coaxed into bloom by those fine mild days which we sometimes have in January, and with the progressing season would be anxiously looking for the development of numberless hidden treasures—the common coltsfoot, with its gray blossoms and delicious scent, scillas of various kinds, hoop-petticoat, daffodils, *Arabis alpina*, hepaticas, various colours; as time goes on the interest is increased by the development of various anemones, *A. pulsatilla*, *A. sylvestris*, the lovely blue *A. apennina*, and several others all full of interest and beauty. The shrubby *Iberis sempervirens*, *Aubrietia purpurea*, *Alyssum saxatile*, *Phlox setacea*, *subulata*, *verna*, and several others; *Saxifrages*, many kinds, will succeed the last mentioned, and the beautiful *S. granulata*, both the single and double, must charm every beholder with the grace and delicacy of its flowers; *Pulmonarias* of many kinds will be beautiful in April and May; the *P. virginia*, with its cerulean flowers, should have a place in every garden; and subjects of interest are now becoming so numerous as we progress towards the month of June, that the difficulty is to select such subjects for mention as may convey an idea of the wealth of enjoyment to be derived from a collection of herbaceous treasures. Various *Delphiniums*, with their ultramarine tints; *Liliums*, various, and all of them exquisite; *Papavers*, gorgeous, but fugacious; *Iris*, some of them truly ex-

quisite (I don't mean the bulbous kinds, which are frequently grown in beds, though they are equally suitable for the borders, but those commonly called flags)—when I was a boy, a neighbour of my father's had as many as twenty or thirty species, many of them truly splendid; *Dianthus*, many beautiful species; *Alstromerias*, many exquisite varieties and species, and all the Chilian varieties are quite hardy; *Anthericum*, several species, all very beautiful, with their snowy panicles of bloom; *Pancratium Illyricum*, a perfect gem; a number of *ononis*, *orobus*, *lathyrus*, and allied genera, many individuals of which are worthy of the utmost attention; *Onosma echioides*, a very old-fashioned plant, but seldom seen in these days; by the by, I must not forget to revert to an individual of a former-mentioned genus, *Orobus lathyroides*, one of the most beautiful things in its way, continuing for a long time its display of numerous trusses of beautiful blue flowers; but I must not trust myself to mention the names of any more of these old and highly-prized acquaintances, suffice it to say, that the interest arising from the culture of hardy herbaceous and bulbous plants is always new. Passing through the autumn months are many kinds of *helianthus*, *aster*, *chrysanthemum*, *stenactis*, *Rudbeckia*, *colchicum*, and many other old friends; the last month in the year is enlivened with the beautiful blossoms of *Helleborus niger*, while *H. foetidus*, with its graceful corymbs of delicate green flowers, is always in its glory on Christmas-day. W. CHITTY,

Stamford Hill.

### NERINE COCCINEA.—AMARYLLIS FOR WINDOW CULTURE.

I HAVE at this time, Oct. 11th, a very fine plant of *Nerine coccinea* in high perfection, in one of the windows of my sitting-room; the flower-scape is twenty-four inches in height, surmounted by eleven fully developed flowers of the richest scarlet; the petals, stamens, and pistillum, all of the same colour, and every portion of

the flower dusted with innumerable spangles of gold; the anthers were of a rich mauve colour for the first few days after the opening of the flowers; they have now changed to a delicate ashy gray, and contribute very much to the beauty of the plant. Every petal of every flower is turned quite back, as in the case of *Souvenir de Chis-*

wick fuchsia, and the whole of them together form a globe at the top of the scape, with the stamens and pistillum protruding in a most graceful manner an inch and three-quarters beyond the globe. The best time to dwell upon its beauty is when the sun is shining upon it, as it is only then that the spangles of gold, with which it is so densely covered, are brought clearly out. A good look into it at such a time, leads one involuntarily to revert to the words of Him who spake as never man spake: "Consider the lilies, how they grow; they toil not, neither do they spin, and yet I say unto you, that Solomon in all his glory was not arrayed like one of these."

This selfsame nerine was given to me about eighteen years since by a friend, who soon after went to Australia, and, although I have had it so long, I have only recently succeeded in getting an offset from it. It does not produce seeds, but small bulbs succeed to the flowers; and although I have several times saved and sown these, I have never succeeded in obtaining a plant from them; there does not appear to be any capacity in the pistillum for the reception of the pollen, which sufficiently accounts for the sterility of the pseudo bulbs. It is of very easy culture, I shake it out about the beginning of September, and repot in two-thirds Wanstead loam and one-third thoroughly rotted manure, and place in a cold frame or greenhouse; it shows its scape in a few days (which has grown with me six inches taller this year than it has ever done before). When the flowers have faded, I place it on the top shelf of a greenhouse, and encourage it by watering, etc., when necessary, to develop its leaves to the fullest extent (as on this depends success with this as with all other members of the same family); it goes on growing till the middle or end of May, when the tips of the leaves begin to turn yellow, when I perceive this, I gradually withhold water till the foliage is quite dead. I still leave it on the top shelf, where it gets thoroughly dried, roasted, and rested, and preparing for the usual round of shaking out, etc., blooming and growing.

*Oct. 13.*—Since writing the above, the points of four or five of the pistils have developed into well-arranged stigmas, to which I have applied the pollen by means of a soft feather (which is a capital instrument for such manipulations), and am hoping for satisfactory results. The remaining pistils manifest no disposition to furnish the necessary facilities for impregnation; the points are rather contracting and shrivelling.

As I have a spare half hour I may as well say that the gorgeous amaryllids are not near so generally cultivated as they ought to be, considering how easily they are managed; there are numbers of them that would succeed to admiration with careful window treatment. *Vallota purpurea*, *V. p. major*, *Amaryllis aulica*, and its varieties, *A. vittata* and its varieties, *A. psittacina* and its varieties, *Hæmanthus coccinea* and *viridiflora*, *Nerine undulata*, one or two of the *Sprekelias*, and the lovely *Cyrtanthus obliquus*, would all succeed well with the careful treatment bestowed on their plants by many window gardeners. The chief items in their culture being, as soon as they manifest signs of growth after a season of rest, shake all the old soil from the roots, and repot in equal parts loam and very well-rotted manure or leaf-mould; Wanstead loam is the best for them. For cultivators near London this is easily procurable, but any rich friable loam will answer perfectly; eschew peat, excepting for *valotas*, but it is by no means indispensable for them; neither is sand necessary in the cultivation of amaryllids. They make, without exception, thick, strong, fleshy roots, and imbibe through their hungry spongioles all the nutriment that can be supplied to them. They should, in fact, be treated just as we treat onions in the kitchen-garden, of which, if we desire a good strong crop, we trench deeply, and manure heavily for them. In potting amaryllids complete drainage is of the first importance; two crocks laid over the hole in the pot, one half way over the hole, and the other resting upon that, with a quantity of small chips of broken pot or

oyster-shell to cover the rest of the bottom part of the pot, and a layer of the fibre of loam or peat over that will be perfect; if in addition cracked pots are used, the very acme of perfection will be attained as regards drainage, and the results will be proportionably favourable. Having repotted, water moderately until vigorous growth has commenced, when water may be more frequently supplied; place the plants in a warm window, in the fullest light, and let the foliage have every chance of developing itself according to character. When the tips of the leaves begin to turn yellow, let water be gradually withheld till they are quite dead, and then place the bulbs, pots and all, in a dry warm cupboard, or some such place, until they show flower or begin again to grow, when the routine of shaking out, etc., must be again gone through.

Those that have persistent foliage, as *Amaryllis aulica*, *Cyrtanthus obliquus*, must be attended to with water all the year round, although but very occasionally in the dormant season. The possessor of a greenhouse may, of course, cultivate successfully many varieties and species of the genera we have been treating of. *Amaryllis aulica* is so accommodating a subject, that I have seen it growing in a common greenhouse, year after year, and break the pot it was growing in by the expansion of its roots, just in the same way as the familiar *Agapanthus umbellatus* does, and certainly a large pot of it, suffered to go on year after year without division, becomes when flowering a truly magnificent spectacle. It is somewhat capricious, flowering indifferently at almost any season. Excuse me for the length of these remarks,  
*Stamford Hill.* W. CHITTY.

### CULTIVATION OF TROPICAL ORCHIDS IN THE OPEN AIR.

MUCH has been written, and with remarkable success, in horticultural books and journals on the culture of orchids. By some the open air culture has been mentioned as a possibility, by others it has been pronounced impossible. It is true the books have popularized the culture of these interesting plants, for at the present day we see everywhere collections of these charming children of the air, and often, as the result of special care, in a state of vigour and prosperity superior to that by which they surprise the traveller who has the advantage of seeing them in their natural stations.

Surely, considering the enthusiasm which these plants have awakened, we may return to the subject of their culture if we have something new to communicate, and that fortunately we have—a method altogether new, and which, by the work accomplished, promises results of no small importance in the future. We can state the purport of this paper in a few words—the *tropical orchids will live and prosper in the open air of the*

*north of Europe during a fine season* No doubt many of our readers will at this announcement be astonished, and cry, "It is absurd!" But nothing can be more true or more simple, and we proceed to state the facts.

In visiting lately the collection of plants of M. V. Van den Hecke de Lembeke, president of the Royal Society of Agriculture and Botany of Ghent, a collection easy of access by the courtesy of its honourable proprietor, we were completely taken by surprise to see exposed to the open air, partially shaded, thirty tropical orchids, all in fine condition, developing a vigorous growth, and announcing a fine and abundant bloom as near at hand.

Of those orchids, some are in pots, others suspended as in their native station, elevated one above the other on the trunks of trees; and above each series of plants, an arrangement for watering is adopted which we thought most ingenious. A large common flower-pot is filled with moss, and when watering is necessary an abundant sprinkling is produced by

filling it with water, which flows through the holes in the pot, and descends from ledge to ledge of the trunks on which the plants are situated in a series of miniature cascades, which, splashing on every side a fine spray, is more refreshing to the plants than the customary syringing adopted in the orchid-house.

The honour of initiating this procedure, which is a veritable progress in the culture of tropical orchids, belongs entirely to the able gardener to M. V. Van den Hecke de Lembeke—M. Felix Van Driessche. In his hands it has been attended with a success most surprising and meritorious, especially as this year (1862) has been remarkable for a generally low temperature, and incessant rains, by no means favourable to this sort of culture.

But it is important to make known the names of the species experimented on, and the following list comprises orchids from both hemispheres, many of them kinds much prized, and some of them generally considered difficult to cultivate:—

#### ORCHIDS SUSPENDED.

Schomburgkia undulata, La Guayra; Cyrtorchilus leucocentrum, Guatemala; Oncidium sphacelatum (6 individuals); O. Guatemala, Mexico; O. flexuosum, Brazil; O. papilio, Trinity, Caraccas; Epidendrum plicatum, Cuba; Lælia anceps (3 individuals), Mexico; Miltonia Clowesii, Brazil; Broughtonia sanguinea, Jamaica.

#### ORCHIDS IN POTS.

Dendrobium speciosum (specimen 40 inches in circumference), New

Holland; Cypripedium insigne, Neapaul; Epidendrum fassidens; E. pulcherrimum; Maxillaria (Lycaste) aromatica, Mexico; Lycaste balsamea; L. Skinneri, Guatemala; Neottia speciosa, India; Phajus grandifolius, China; Cymbidium sinense, China; Eria flava, India.

We felicitate M. Van Driessche on his ingenious attempt, and its happy issue. The result of this mode of treatment will be that thus exposed the delicate and difficult plants will be perfectly hardened, and the bulbs rendered fully ripe. It follows that plants thus treated will require only a gentle heat to preserve them during the winter.

The above will prove that the culture of orchids is a much more simple affair than has been supposed, and henceforth it is within the means of every amateur possessing a small stove, or even a warm greenhouse.—*Verschaffelt's "L'Illustration Horticole."*

[It is right we should add to the above that during the present season Messrs. Veitch have used scarcely any fire-heat in their orchid-houses at Exeter. By judicious economy of sun-heat, fuel has been almost wholly dispensed with, and the chief difficulty in carrying out this modified plan of culture has been, not with the plants, but with the men in charge of them, who, being prejudiced in favour of high artificial temperatures, have not readily fallen in with the economical method. With the help of "Williams's Orchid Grower's Manual" the amateur may now enlarge the circle of his pleasures by the cultivation of these beautiful plants.

### LONDON ROSES.

IN the FLORAL WORLD of September, 1860, appeared the first comprehensive list ever till then published of roses suitable for culture in the immediate neighbourhood of towns; many times since then correspondents have urged us to say something more upon the subject, but we were stubbornly reticent because we had nothing more to say. Very few

people have any idea of the long and patient observation necessary before a few definite principles can be enunciated on such a subject as this; and as to making up lists of plants for peculiar purposes, it is a task involving serious responsibilities, and beset with difficulties from beginning to end. Those who make lists by marking off varieties as they find

them described in catalogues, do more harm than good, and as good only is our object, we shall prefer, as we have done occasionally, to disappoint our readers, rather than seek temporary favour by giving lists at random without any very distinct ideas as to their ultimate use. Thus in the matter of roses, we grow as many of the new varieties as we can make room for, and assiduously compare them with established favourites. Many that we have some preference for we do not recommend; many that do well with us in our comparatively pure air, three miles from St. Paul's, we know would not suit the majority of amateurs who are less fortunately placed; and so we take time, and had better take time than profess to answer inquiries instantaneously that need to be considered at length, and so make of the FLORAL WORLD a mere bottle of smoke. That published lists are all capable of improvement, is exemplified in a fine old apple tree in our garden. It gives the largest crops of any we possess, the fruit is nearly as large as Alexander, and a trifle more handsome. It is almost a dessert fruit when newly ripe, and quite so at Christmas; keeps till March, never shrivels, the flesh is very tender, juicy, moderately sweet, pleasantly sub-acid, and for any cooking purpose, apple jelly included, there is no kitchen apple that surpasses it. Our own tree of this variety is a picture of health and vigour, and you might travel far and wide to match it for beauty and fruitfulness; yet that particular variety is not entered in any nursery catalogue—it is not to be found in Lindley's "Guide," or Hogg's "Manual," or any other authority I have yet consulted in order to see it professionally described. It is Shepherd's Fame, the parent, I believe, of Dumelow's seedling and some other varieties equally well known. Now if such an apple can be allowed to slip out of the lists, why may not many good roses go the same way, and *vice versâ*, some find entrance that are not worthy of insertion? To do justice to old roses, then, as I would if I could do justice to Shepherd's Fame, let me tell you

one of the greatest enjoyments I have in the season of roses is a long treble row of common cabbage and common moss, which occupy the front of the piece I devote to hollyhocks. Numbers of lady friends come here every year to see them in bloom. There is nothing to beat them in the whole round of rose culture: they take care of themselves, have but one off-hand pruning every spring, and in due season they are always smothered from head to foot with their exquisitely tinted and fragrant blossoms, when half open as round as a ball, or more like the cheeks of a chubby baby that grows fat because it never cries, and their deepening rosy tints towards the centre answering very well to a baby's pouting lips, just ready for a rollicking laughter. Now there are two roses for Londoners, which they may grow by scores, and I want to know why they do not grow them? Nobody recommends them, that's the reason; there is such a rush after the last novelty, and the huge roses people see at the exhibitions, that the cabbage roses they pay a penny apiece for in the City to put in button-holes are forgotten as things that may be grown at home in the smokiest of atmospheres if they are but honestly dealt with. But in what does honest dealing consist? Thereby hangs a tale. I said above, mine take care of themselves; by that I mean, they have very little attention, and in my strong soil they do not need it. You may guess the soil here suits roses, if I tell you that blooms on Madame Damage this season measured five inches across, and held together after opening eight to ten days, on shoots of the year before as thick as a carpenter's pencil. But the fact is, my cabbage roses are sometimes taken up for alterations, and lay in by the heels all the winter, and are not planted again till March, and then bloom abundantly. Last autumn the hollyhock piece was trenched and liberally manured, and the cabbages had something extra good to root in, and they were not left in by the heels more than a day or two. When they were pruned they were dressed with ashes, and the

result has been immense vigour of growth; some of the shoots of this season are three feet long, and as thick as my second finger. Now, you suburbanite, you would like such a lot, would you not? Well, don't go planting them in the borders next walls, or palings, or privet hedges; they will do no good there. Follow the plan recommended in the *Town Garden*, and give them a piece of ground in the centre of the garden where there is a maximum of light and air. Trench the ground two spades deep, and leave it rough for a week. Then dig it in the usual way and manure it liberally with half-rotten dung; plant the roses at once, tread them in firm, and leave them alone till March; then prune them all uniformly to within six inches of the ground. If they bloom but moderately the first season never mind, they will bloom freely enough every season afterwards, and the pruning will be a simple matter of cutting all the shoots of the previous year back to about half their length, to keep the plants uniformly about eighteen inches or two feet high. Every three years take them up and divide them at the root, or better still, to prevent suckers, put in a few cuttings in the open ground every October, and you may keep a whole neighbourhood supplied with plants from your own nursery. As they can be bought for five shillings a dozen, here is a cheap and certain start for anybody who loves roses, and who cannot escape from bricks and mortar. But that there may be no mistake in this matter, let it be understood that we do not recommend for town gardens any of the delicate varieties of moss and cabbage roses. Take the common kinds of both, and be content till you can prove for yourself that it is possible to grow others, then follow up with *White Provence*, *Crested Moss*, *Alice Leroy*, *Baronne de Wassenae*, *Gloire des Mousseuses*, *French Crimson Moss*, *White Bath*, *Princess Royal*, *Madame Edouard Ory*, *Salet*, and a dozen or so others indescribably beautiful, the last two just named being abundant autumn bloomers.

Let me tell you of a few of the summer roses of inestimable value for town gardens, and which will never be thrust out of good gardens by any extension of autumnals. There are some beauties among the *Damask*, *Gallica*, and summer *Bourbons* that are the very perfection of roses; nothing can surpass them, and, unlike many of the autumnals, they are more *uniformly good* in favourable and unfavourable seasons, and *never fail* to bloom when their season arrives. Moreover they are, for the most part, a few degrees hardier than the autumnals; certainly, after the winter of 1860 there were plenty to be had from the nurseries where not an autumnal was to be found in a specimen state. When we have pitched the praises of *H. P. General Jacqueminot* in the highest key, there remains *Brennus* quite as good, but not a perpetual. *La Ville de Bruxelles*, delicately crimped and quartered, and with vivid crimson lines upon its ground of light rose, a gem in colour and a tremendously free rose to grow and bloom. So again *Boula de Nan-teuil*, *D'Aguesseau*, *Duchess of Buccleugh*, *Kean*, *Ohl*, *Transon Goubault*, and *Triomphe de Jausens*, all high coloured. *Gallicas* will grow in any moderately-open town garden, and make the finest heads as standards of any class of roses we have. Of hybrid *China*, and *Bourbon* there are a fair dozen for the townsman all proved, and the best of them are *Brennus*, a thorough bouncer of a rose, *Coup D'Hébé*, *Frederic the Second*, *Comte Boubert*, *Paul Perras*, *Paul Ricaut*, and, if the situation is really good, *Madame Plantier*, pure white, most beautiful when just expanding from the bud. As to the hybrid perpetuals, there are several beauties which can now be added to the former list, and amongst them *Madame de Cambacérés*, a fine large cupped rose-coloured flower of profuse habit, a better London rose, perhaps than any yet announced, which I have been cutting all through this past October, to carry flowers to the bedroom, where they finish their days in white glass phials on the mantel-shelf for the refreshment of my better half,

who has not visited the garden for six months past.

Roses for town gardens must not be selected according to the repute they have in the books; thus, I would advise townsmen to be very cautious about using *Geant des Batailles* as a standard, in which form near London it is always deformed and leprous with mildew. On its own roots it is like most of its kindred, a much better grower than when hoisted up out of its element, and on foster roots. So as to quality, by comparison, where few roses can be grown, I would strike out nearly all the *noisettes*, for what among them can be now worth growing, except *Aimee Vibert* and *Fellenberg*. Some *Gallicas* still retained in the catalogues are rubbish, as, for instance, *Dido*—who will care to see *Dido* a second time? *Pharencus* is only fit to grow in a hedgerow, and the townsman must have nothing to do with *Alba*, *Hybrid Provence*, *Austrian*, or *Banksian* roses, except to grow under glass, on which subject we must have a word hereafter. For a final remark, before presenting the revised lists, what is the use of roses of sprawling habits, except to peg down or cover rockeries? In a mixed collection they are a positive nuisance. Plant *Caroline Marniesse* on its own roots, in a row with *perpetuals*, and what a disgrace it is to the scene with its shabby white flowers and thrust-out briar-looking growths. So with *August Guinnoisseau*, unless pegged to bloom on the ground, it is always untidy, and if wetted with a shower while in bloom tumbles over and gets its fine crimson petals drabbled with dirt. My way of growing these sprawlers, the pretty *Fellenberg* included, is on the face of a rockery, where they can lay full length, and make a pretty sparkling of their clustered flowers.

#### SUMMER ROSES FOR TOWN GARDENS.

*Provence and Moss*.—Common Moss, rose; Common Cabbage, rose; Maiden's Blush, flesh white; White Moss, white; Luxembourg, crimson; *Purpure rubra*, purple; *Comtesse Murinais*, white.

*Damask*.—*La Ville de Bruxelles*,

flesh and deep rose; Common Damask, crimson, single, but good.

*Gallica*.—*Boula de Nanteuil*, crimson purple; *D'Aguesseau*, rich crimson; *Duchess of Buccleugh*, dark rose and blush; *Kean*, velvety purple, scarlet centre; *Ohl*, dark crimson; *Trancon Goubault*, deep crimson; *Triomphe de Jausseus*, crimson, shaded purple.

\* \* These seven French roses are large, full, finely formed, and the very best of show roses. They require generous culture, and close pruning. There is a long list of *Gallicas*, but very many are worthless.

*Hybrid, China, and Bourbon*.—*Beauty of Billard*, crimson; *Blairii*, No. 1, light rose; *Brennus*, deep carmine; *Charles Duval*, deep pink; *Charles Lawson*, vivid rose; *Chénédolé*, vivid crimson, fine for a pillar; *Coup d'Hébé*, deep pink, exquisite; *Frederic the Second*, crimson purple, fine for a pillar; *Fulgens*, deep crimson; *General Jacqueminot*, purplish crimson, dull, but free and good; *Madame Plantier*, white, fine for a good position; *Paul Perras*, pale rose, rather delicate; *Paul Ricaut*, rosy crimson; *Vivid*, glowing crimson.

#### AUTUMNAL ROSES FOR TOWN GARDENS.

*Hybrid Perpetuals*.—*Abd-el-Kader*, bright velvety purple, shaded with scarlet, large; *Alexandrine Bachmeteff*, bright red, large; *Alexandrine Belfroy*, peach, a full, handsome rose; *Alphonse Karr*, bright rose, a gem, though small; *Anna Alexieff*, rose, large, full, good habit; *Anna de Diesbach*, clear rose, large; *Baronne Prevost*, pale rose, very large; *Baronne Hallez*, dark red, full; *Belle de Bourg la Reine*, satin-like rose, large; *Cardinal Patrizzi*, brilliant red, shaded; *Caroline de Sansal*, clear flesh, edges blush, large; *Colonel de Bougemont*, pale rose, shaded with carmine, very large, sometimes loose; *Comte de Nanteuil*, bright rose, darker edges; *Comtesse de Chabillant*, pink, beautifully cupped, large, very sweet; *Docteur Marx*, carmine, large, not a show rose; *Duchess of Sutherland*, pale rose, large, and very double; *Evêque de Nîmes*, bright, purplish



red; Eugene Appert, velvety crimson, pointed petals, striking, fine foliage; General Jacqueminot, brilliant red, velvety like a camellia, large but not sufficiently double; General Pellissier, delicate rose, large, very sweet; General Simpson, bright carmine, full, fine shape; General Washington, bright rosy red, large and full, one of the best; Gloire de Santenay, scarlet crimson, very fine; Jules Margottin, bright cherry, large and full, superb, and a tremendous grower; Leon des Combats, reddish violet, often shaded with scarlet; Lord Raglan, scarlet crimson, edges violet crimson, large, full, splendid foliage, quite *sui generis*, and a fine grower; Louise Peyronny, silvery rose, large, full, but shy; Madame C. Crapelet, red, veined with lilac, large, full; Madame de Cambaceres, rosy carmine, large and full, fine form, and one of the best town roses; Madame Damage, bright rose, very large, double, and exquisitely scented; Madame Knorr, bright rose, edges paler, not to be surpassed by any rose when in bud; Madame Laffay, rosy crimson, large; Madame Vidot, transparent flesh, shaded with rose, imbricated, always perfect; Mademoiselle Alice Leroy, delicate rose, shaded, small; Mademoiselle Betsy Haiman, brilliant cerise, lovely colour, finely cupped, grows like Jules Margottin, and should have a place with that and the General; M. Louise Carique, bright rosy carmine; Marie Portemer, purplish red, full; Mrs. Elliot, rosy purple, large and very double, shy; Mrs. Standish, rosy lilac, large and showy; Ornement des Jardins, brilliant crimson, velvety, effective; Pius the Ninth, crimson purple, large; Prince Leon, bright crimson, large, double, and perfect in form; Prince Noir, dark crimson purple; Sénateur Vaise, bright red, large, double, superb; Souvenir de Leveson Gower, fine dark red, changing to ruby; Souvenir de Reine d'Angleterre, bright rose, large and full, very fine in the first bloom, and of very little account in London afterwards, therefore thin it well, secure a few good blooms, and be content, it is scarcely an autumn rose in town; Victor Verdier, rosy carmine, purplish

edges, large, showy, free, very effective; William Jesse, crimson, tinged with lilac, very large, rather sprawling as a dwarf; William Griffith, pale satin rose, large and full; Comte d'Eu, brilliant carmine, often beautiful; Géant des Batailles, brilliant crimson, shaded with purple; Gloire de Rosomenes, brilliant carmine, showy, semi-double, a sort of large edition of Fellenberg, and always in bloom; Lord Palmerston, cherry red, full, fine form, flowers freely; Louise Odier, fine bright rose; Thomas Rivers, rosy lilac, large.

*Bourbon*.—Acidalie, blush white, will do instead of Souvenir de Malmaison and Devoniensis, where those cannot be grown, as it is less delicate than either of them; Aurore du Guide, purplish red; Comtesse de Barban-tanne, flesh colour, large; Docteur Leprestre, bright purplish red, shaded; Dupetit Thouars, beautiful bright crimson, large and full; Empress Eugénie, rose, purple edges, large; Justine, rosy carmine, good, very double; La Quintinie, bright crimson, shaded, or changing to blackish violet, full; Leon Oursel, light red, large and full; Prince Albert (Paul's), scarlet crimson, the finest bright rose of this class; Queen, buff rose, free bloomer, large and double, really the second best rose for London; Sir J. Paxton, bright rose, shaded with crimson; Souvenir de Malmaison, clear flesh, edges blush, the best light rose in existence, all points considered, and a few degrees harder than Devoniensis.

*Noisette*.—Aimée Vibert, pure white; Desprez à fleur jaune, red, buff, and sulphur, variable, very sweet; Lamarque, sulphur yellow, very large; Ophir, nankeen and copper, very beautiful and a remarkable rose for effect, distinct, full; Fellenberg, cherry red, very lively, and always in bloom; Jeanne d'Arc, as good as a tea, will be very useful for those who cannot grow Devoniensis.

*China*.—Archduke Charles, shaded rose, changing to crimson, third-rate in quality; Cramoisie Supérieure, rich velvety crimson, beautiful bedder; Elise Flory, rose, small and pretty; Fabvier, brilliant scarlet,

dazzling, semi-double, and the best of all bedding roses; Mrs. Bosanquet, pale flesh, clustering, most beautiful.

*Tea-scented*.—Bougère, deep rosy bronze; Devoniensis, pale yellow, superb in bud, must have a good air; Gloire de Dijon, yellow, shaded with salmon, very large and full—a superb rose for London; Madame Bravy, cream, large and full; Niphetos, pale lemon, often snowy white; Safrano,

bright apricot in bud, changing to buff; Semele, yellow and fawn. These teas are entered for gardens where the more robust roses have been found to do well. There will always be a certain amount of risk in growing teas near towns, and those few named are the most likely to succeed, and do succeed with us to admiration, as do many others we will not venture to add to the list.

SHIRLEY HIBBERD.

### NOVEMBER, 1862.—30 DAYS.

PHASES OF THE MOON.—Full, 6th, 0h. 48m. after.; Last Quarter, 14th, 6h. 10m. after.; New, 21st, 6h. 14m. after.; First Quarter, 28th, 10h. 2m. morn.

| D<br>M | Sun<br>rises. | Sun<br>sets. | Weather near London, 1861. |        |              |       |      |                          | Rain.                           | THE COUNTRY. |
|--------|---------------|--------------|----------------------------|--------|--------------|-------|------|--------------------------|---------------------------------|--------------|
|        |               |              | BAROMETER.                 |        | THERMOMETER. |       |      | Rural Sights and Sounds. |                                 |              |
|        |               |              | Mx.                        | Min.   | Mx.          | Mn.   | Me.  |                          |                                 |              |
|        | h. m.         | h. m.        |                            |        |              |       |      |                          |                                 |              |
| 1      | 6 55          | 4 32         | 29.389...                  | 29.214 | 51...        | 28... | 39.5 | .11                      | Charlock flowers                |              |
| 2      | 6 57          | 4 30         | 29.445...                  | 29.238 | 48...        | 29... | 38.5 | .13                      | Fieldfares about ricks          |              |
| 3      | 6 59          | 4 28         | 29.886...                  | 29.671 | 51...        | 19... | 35.0 | .02                      | Flocks of redwings              |              |
| 4      | 7 0           | 4 26         | 29.964...                  | 29.925 | 52...        | 31... | 41.5 | .06                      | Swine thistle flowers ]         |              |
| 5      | 7 2           | 4 24         | 29.659...                  | 29.515 | 56...        | 31... | 43.5 | .69                      | Snipes in marshes               |              |
| 6      | 7 4           | 4 23         | 29.497...                  | 29.343 | 50...        | 25... | 37.5 | .07                      | Traveller's joy seeds           |              |
| 7      | 7 6           | 4 21         | 29.422...                  | 29.364 | 56...        | 24... | 40.0 | .00                      | Byssocladium on windows         |              |
| 8      | 7 8           | 4 20         | 29.314...                  | 29.290 | 55...        | 22... | 38.5 | .00                      | Fungi very beautiful            |              |
| 9      | 7 9           | 4 18         | 29.534...                  | 29.416 | 53...        | 28... | 40.5 | .40                      | Fir-tree comes open             |              |
| 10     | 7 10          | 4 16         | 29.326...                  | 29.102 | 51...        | 35... | 43.0 | .30                      | Lepralia abound                 |              |
| 11     | 7 12          | 4 15         | 29.681...                  | 29.545 | 54...        | 24... | 39.0 | .01                      | Marsh ragwort flowers           |              |
| 12     | 7 14          | 4 14         | 29.730...                  | 29.677 | 46...        | 28... | 37.0 | .08                      | Dog violet flowers [the soil"   |              |
| 13     | 7 16          | 4 12         | 29.687...                  | 29.912 | 49...        | 34... | 38.5 | 1.16                     | "As yet the bluebells linger on |              |
| 14     | 7 18          | 4 11         | 29.280...                  | 29.276 | 48...        | 32... | 40.0 | .03                      | Many spring flowers appear      |              |
| 15     | 7 20          | 4 9          | 29.489...                  | 29.421 | 47...        | 17... | 32.0 | .00                      | Fairy money-jars                |              |
| 16     | 7 21          | 4 8          | 29.582...                  | 29.552 | 43...        | 24... | 33.5 | .00                      | Jews'-ears on oak trees         |              |
| 17     | 7 23          | 4 6          | 30.047...                  | 29.837 | 34...        | 14... | 24.0 | .00                      | Redwing sings gaily             |              |
| 18     | 7 25          | 4 5          | 30.415...                  | 30.253 | 33...        | 13... | 23.0 | .00                      | Nidularia campanulata           |              |
| 19     | 7 27          | 4 4          | 30.495...                  | 30.330 | 47...        | 28... | 37.5 | .00                      | Fogs prevalent                  |              |
| 20     | 7 28          | 4 3          | 30.253...                  | 30.040 | 51...        | 31... | 41.0 | .00                      | Tremella arborea                |              |
| 21     | 7 30          | 4 2          | 29.916...                  | 29.574 | 53...        | 43... | 48.0 | .03                      | Northern lights                 |              |
| 22     | 7 32          | 4 1          | 29.614...                  | 29.292 | 49...        | 30... | 39.5 | .80                      | Showers of ærolites             |              |
| 23     | 7 33          | 4 0          | 29.510...                  | 29.370 | 47...        | 29... | 35.0 | .00                      | Brambles continue flowering     |              |
| 24     | 7 35          | 3 59         | 30.029...                  | 29.868 | 45...        | 16... | 30.5 | .00                      | Trees get naked                 |              |
| 25     | 7 36          | 3 58         | 29.907...                  | 29.577 | 51...        | 42... | 46.5 | .08                      | Thorns full of ripe fruit       |              |
| 26     | 7 38          | 3 57         | 29.669...                  | 29.551 | 58...        | 30... | 44.0 | .00                      | Gray wagtail arrives            |              |
| 27     | 7 40          | 3 56         | 29.793...                  | 29.788 | 51...        | 24... | 37.5 | .00                      | Drab day-moth                   |              |
| 28     | 7 41          | 3 55         | 29.918...                  | 29.884 | 53...        | 30... | 41.5 | .00                      | Flat-bodied moth                |              |
| 29     | 7 43          | 3 54         | 29.739...                  | 29.678 | 57...        | 49... | 53.0 | .00                      | Carabus morbillosus             |              |
| 30     | 7 44          | 3 53         | 29.780...                  | 29.748 | 56...        | 40... | 48.0 | .08                      | Snipes depart                   |              |

### NOTES FOR THE GARDEN.

KITCHEN GARDEN.—Mildew is very prevalent in damp seasons, and is encouraged by a foul state of the ground; therefore keep all clean, and remove dead

leaves from among sprouts, kale, etc. Paths should be turned, and protective materials got ready, and kept under cover for use wherever wanted. Peas and beans, for the first crop next season, may be sown on well-drained ground; but where snails abound, they are likely to be entirely eaten up before the new year. To sow now is altogether a speculation.

**FRUIT GARDEN.**—Planting and pruning should be commenced at once. Old apple-trees infested with vermin should be well scrubbed with a hard brush dipped in warm brine, and all the holes stopped up with a paste made of clay, sulphur, soot, and cow-dung. Plant at once all bush and tree fruits. Stake newly-planted trees. Put in cuttings of gooseberry and currant trees. Prune vines and wall-fruit trees.

**FLOWER GARDEN.**—Continue to plant hardy bulbs; a sound loam moderately

manured will grow any of the kinds ordinarily used in beds and borders. Large bulbs placed with their crowns four inches from the surface, small ones two inches. Take up dahlias and Marvel of Peru roots, dry carefully, and store safe from frost. Air hardy plants in pits well, and look out for mildew and vermin. Make all speed to complete improvements and alterations.

**GREENHOUSE AND STOVE.**—Keep the house as cool as possible to be safe from frost. Give plenty of room, or the plants will get spindled and mildewed. Plants to be forced should remain in the greenhouse a fortnight before going to the stove. Roses, Siberian lilacs, deutzias, camellias, azaleas, double flowering peaches, etc., should be brought on in batches, to keep up a succession. Keep vines well syringed where they have broken well; let the heat be moderate.

## NATURALIST'S CALENDAR.

By some accident the printer was supplied with a calendar for the month of October, in which the "Rural Sights and Sounds" were repeated from the month of August last. Many of our readers were no doubt astonished at the sights and sounds thereby brought to their notice two months after the proper time. Subjoined is the list which should have appeared in the October calendar—

- October 1. Dartford warbler arrives
- " 2. Redstart departs
- " 3. Amber snail
- " 4. Sycamore highly coloured
- " 5. Beech tree in great beauty
- " 6. Fly agaric abundant
- " 7. Wheatears depart in flights
- " 8. Acorns ripen
- " 9. Fieldfares arrive
- " 10. Maggots of tipula
- " 11. Plume moss
- " 12. Mosses thicken about the roots of trees

- Oct. 13. Fern spores ripen
- " 14. *Genista pilosa* flowers second time
- " 15. Marsh pennywort on meadows
- " 16. Violets flower again
- " 17. Shepherd's spikenard flowers
- " 18. *Physa fontinalis*
- " 19. Beechmast abundant
- " 20. Flocks of winter birds
- " 21. Mountain-ash berries ripen
- " 22. Ivy in full beauty
- " 23. Marine algae fine
- " 24. Spindle tree ripens fruit
- " 25. *Arbutus* flowers
- " 26. *Arbutus ripens* fruit of last year
- " 27. Briony festooned with fruit
- " 28. Sloes ripen
- " 29. Naked crocus flowers
- " 30. *Pyrola rotundifolia*
- " 31. Storms of rain to be expected

## TO CORRESPONDENTS.

**BOOKS RECEIVED.**—"Birds and Flowers; or, the Children's Guide to Gardening and Bird Keeping. By the author of 'Indoor Plants, etc.' Published by Emily Faithful." This pretty book came to hand too late for anything more than this announcement of it; we believe it will prove to be the best of Miss Malins's many useful books.—"A Treatise on the Culture of the Pine Apple, with the Vine

in the same Chamber. By Thomas Tordron. Allen." The author has compressed into a few pages the results of many years' experience, so that every beginner in this department of horticulture may be safely guided through every difficulty.—"Albert the Good; a Nation's Tribute of Affection to the Memory of a truly Virtuous Prince. J. F. Shaw." A selection, by Mr. Kime, of newspaper,

magazine, and review articles on the life, character, and labours of the late Prince Consort, and in addition some materials towards his biography. It is embellished with a fine portrait, and in every way most elegantly got up.

**CATALOGUES.**—"Carter and Co.'s Autumn Supplement to the Gardener's Vade Mecum," contains a copious descriptive list of Dutch and Cape bulbs, and a selection of greenhouse and bedding plants for present use, and to grow for spring propagation.—"Ambroise Verschaffelt, Rue du Chaume, Ghent, Belgium. Price Current for Autumn 1862 and Spring 1863." The list of camellias is now brought down to 1860, and collectors may thereby correct and amend their own private catalogues. Copies of M. Verschaffelt's catalogues may be had on application to Mr. Silberrad, 5, Harp Lane, Tower Street, London, E.C.—"C. Grimby, Albion Nursery, Stoke Newington. Catalogue of Plants, Trees, Shrubs, Hyacinths, etc., 1862-63." A new calceolaria, called *Excelsior*, is announced, and described as follows:—"By far the best habit and most showy bedding calceolaria ever produced; colour, bright velvet-scarlet, with golden rim; flower larger than Sultan, and much better shape. Very large trusses and stands the heaviest storm."—"Paul and Son, the Old Nurseries, Cheshunt, Herts. Descriptive Catalogue of Roses, 1862-63." We see in its place in the list of perennials, "Lord Clyde" announced to be sent out in April next. In the same list we see Monte Christo, Francis Lacharme, John Hooper, Madame Caillat, Maurice Bernardin, Mrs. Charles Wood, Notre Dame de Fourvieres, Robert Fortune, and William Pfitzer.—"Holland and Bayley, Bradshaw Gardens, Chadderton, near Manchester. Catalogue of Florists' Flowers, Lancashire Gooseberries, Orchard Fruits, Greenhouse Plants." Full to the brim with the very best of all the classes of subjects named, and is a commercial key to one of the best nursery collections in the north of England.—"Butler and McCulloch, South Row, Covent Garden. Autumn Catalogue of Dutch and Cape Flowering Bulbs, etc." comprises the curiosities as well as the most popular subjects among the bulbous-rooted plants. There are cultural directions, and designations of the species and varieties best adapted for limited selections.—"Sutton and Sons, Reading. Catalogue of Bulbs, Geraniums, Roses, Fruit Trees, and Seeds for Early Sowing, etc." A capital classification, including

hyacinths, tulips, gladioli, crocuses, iris, Cape bulbs, lilliums, fuchsias, ferns, ornamental trees, roses, fruits, and kitchen and flower garden seeds.—"Henry Lane and Son, Great Berkhamstead, Herts. Catalogue of Roses, 1862-63. Catalogue of Fruit Trees. Catalogue of American Plants, Conifers, and Deciduous and Evergreen Trees, and Shrubs," admirably arranged. The fruit catalogue has been prepared with extra care, to insure accuracy in the descriptions.—"William Paul, Waltham Cross. Descriptive Catalogue of a Selection of Roses." Two new roses are described in this, namely, Lord Macaulay (H. P.), velvet-crimson, in the way of General Jacqueminot, but brighter in colour, thicker in petal, and more double. Lord Herbert (H. P.), rosy-carmine, petals reflexing, in the way of Beauty of Waltham.—"William Wood and Sons, Woodlands Nursery, Maresfield, near Uckfield, Sussex. General Catalogue of Ornamental Trees and Shrubs, Conifers, Evergreens, Fruit Trees, Herbaceous Plants, etc. Descriptive Catalogue of Roses for Autumn, 1862, and Spring 1863." Messrs. Wood follow the old plan of raising roses on their own roots to a greater extent than most of the rose nurseries.—"List of Dutch Flower Roots," comprising gladioli, hyacinths, crocus, ixia, sparaxis, etc.—"Select List of Seeds for Kitchen Garden, Flower Garden, and Farm."—"Eloffe and Company, 10, Rue de L'Ecole de Medicine, Paris. Priced Catalogue of Minerals, Metals, Fossils, Dried Plants, etc., and a List of Books useful to Naturalists."—"Hooper and Co., Centre Avenue, Covent Garden. Autumn Catalogue of Dutch, Cape, and other Flowering Bulbs," prefaced by some useful notes on culture, and supplemented with a very interesting list of herbaceous plants and annual seeds for autumn sowing.—"Thomas Rivers and Son, Nurseries, Sawbridgeworth, Herts. Catalogue of Roses, Autumn 1862, and Spring 1863," thirteen pages of names and descriptions, invite the rose-grower to spend half an hour in perusing a list from which all the third-rate roses are expunged, and the very best indicated by comparisons and estimates in an original and genial vein.

**GAS HEATING.**—W. C. D., *Stoney Stratford*.

—To heat your conservatory sufficient to keep out frost, the gas-stove manufactured by Mr. Trotman, nurseryman, New Road, Hammersmith, London, W., will answer perfectly well. The cost will be about £2. Messrs. Phillips, of Skinner

Street, Snow Hill, London, E.C., produce a most excellent form of apparatus, and have had great experience in heating plant-houses with gas.

**LIME AS A MANURE.**—*B. A.*—Lime is the best of all revivers for an old garden soil. It kills vermin, destroys sour humus, supplies the salts that are likely to be most deficient, and will do somewhat to eradicate club. Fifty bushels per acre may be used on an old garden loam of the ordinary staple, or if clay, not less than seventy bushels per acre. It cannot be used too fresh from the kiln, and should be dug in rough the first time without breaking, and but a small quantity should be spread at a time, as it quickly slackens, and then loses much of its power in exerting an influence on the soil. After the ground has been laid up rough some weeks, it should be occasionally turned, and in spring, before planting commences, have another dressing of twenty-five bushels of salt per acre. At the second digging the lumps of lime will be found to be soft and friable, and will mix then with the soil more freely than at first.

**OLD GERANIUMS.**—*Constant Reader.*—The **FLORAL WORLD** has always defended the old family geraniums of the windows and the gardens, and the doctrine applies with more force to your Tom Thumbs which have been out all summer. Save them, certainly; every one of those old plants will next year be worth half-a-dozen young nursery plants. What the gardener says about their not bearing to be moved is all nonsense; if he cannot move them, let him move off, and make room for somebody who can. Take them up; if you cannot pot them, plant them in boxes, using poor gritty soil or sand, and place them anywhere in the light and safe from frost, and give only as much water as will keep them alive. They may be planted in a frame provided there is a dry bottom; if the position is damp you may lose them all. In the spring you may do anything with them, and the best thing to do will be to take them up, pot them in small pots with a little trimming of their roots and heads, and give them a start in a warm greenhouse.

**DISEASED FUCHSIAS.**—*Fuchsia.*—Your fuchsia leaves prove that you have something more than the name of thrip. You have the pest itself in its most horrible reality, and with it a still more insidious pest, red spider. The management has been very bad, and you have evidently not read your **FLORAL WORLD** with diligence. Give your plants more

pot room, a better soil, more water at the root, more syringing overhead; keep the floor of the house moist by dashing water on it three or four times a-day, and you will soon get rid of these pests, and never see them again, if you pursue a more liberal course of treatment.

**DISEASED PEACH TREES.**—*I have some peach and nectarine trees on a south wall, they have been planted four years, and have been well manured. They have made very little growth, for as soon as a good shoot grows, it becomes cankered and dies. The tops of the young shoots are screwed together, and full of black blight. The soil is gravelly, very light and dry. Peas and plums do well on the same wall. Can I do anything to set them right, or had I better root them out altogether?* *L. H.* [We have so often seen trees in such a state as yours recovered by good treatment, that we think you may bring them round if you take them in hand at once; if left as they are another season they will probably die outright. We must ask, first, does the border readily part with surplus moisture? is it drained, and does it need draining? If the soil is not well drained, all other efforts at recovery will be useless. Supposing the drainage to be good, we should proceed as follows:—The trees to be taken up with all their roots as little injured as possible; the light dry soil to be removed one foot deep and six feet square for every tree. The openings so made to be filled up with four-fifths good retentive loam from a pasture with all the turf in it, and one-fifth rotten dung, the whole well chopped up and incorporated together. Replant the trees, carefully spreading out their roots and removing with a sharp knife any portions bruised by the lifting, and for many years to come they will grow well and bear satisfactorily.]

**GREENHOUSE CREEPERS.**—Seeing in the catalogues *Mandevilla suaveolens* named as a greenhouse climber, I purchased one for my conservatory, but it never blooms, and grows very little—collecting all the pests of the house about it. I have now had it four years, and done no good with it, and would turn it out, but wait any suggestion you may give me. I have also a *Passiflora princeps* in the same conservatory, but it does not bloom, and grows very slowly. Also a *Tasmania manicata* that has grown well but will not bloom; and the red spider gets on it and troubles the gardener so much so that he wants it turned out. The house is heated in winter so

as to keep out all frost, but not kept above 40° or 50°. What creepers can I have to take the place of those mentioned? I have a large pomegranate eight feet high on my lawn, but it never flowers. I have cut it cup-shaped to let in the sun and air, and done all I can to harden the wood; it looks very healthy, but only one or two small blooms appear, and they are on the north side of the tree. I have put out several *Jacobea* lilies in warm corners, and they stood last winter, but I see no signs of bloom. In placing the *daturas* in the flower-beds they have this summer infected the *calceolaria* and *heliotrope* beds with red spider, and although I have used the syringe and engine I cannot get rid of them. Any suggestions will oblige.—*A. B. S., Torquay*. [You have three as good creepers as it is possible to have; but how are they planted? *Mandevilla suaveolens* and *Passiflora princeps* like a little more warmth than they can generally be favoured with in a common greenhouse; nevertheless they do not want stove-heat, and are true greenhouse plants, if properly treated. They should be planted out in the border or in a pit raised above the floor of the house, the pit to have a good layer of drainage material at the bottom, on that whole turves, grass side downwards, and then filled up with peat and loam equal parts, with one-sixth part of thoroughly-rotten manure. Thus managed in the warmest part of the house, they will grow and flourish satisfactorily; and if syringed freely while growing, no insect will ever come near them. You have here as good a code of culture as could be furnished even if a whole book were written on the subject. Your pomegranate is, we suspect, in too low a position, and hence makes a fat, soft, sappy growth which can never ripen. If such is the case, take it up and plant it in a higher and drier position, or open a trench all round it, two feet deep and four feet from the plant, and fill up the trench with pieces of stone, flints, or brickbats to draw the water away from the roots during wet weather. Perhaps you cut it too hard, and so keep it throwing out new shoots instead of ripening flower-buds; if this be the case, allow all the moderate shoots to remain, and pinch in all the strongest to the third or fourth leaf early in the growing season.]

VARIOUS.—*J. W.*—You shall hear.—*R. C.*—The "Garden Oracle" will tell you how to multiply your bulbs to any extent, and give you work enough in bulb

culture for the rest of your life if you like to engage in it.—*L. H.*—The *Deodar* may be pruned to any desired form in April, just before making its new growth.—*W. S. B., Glasgow*.—The fern is *Asplenium adiantum*. Take up your almond, and replant it in chopped turf from old pasture in the warmest position you have.—*A. B. Sedum fabarum*.—The *Sedum* you sent previously is *S. denticulatum*.—*S. A.*—Nothing better for your little house than one of the small stoves sold by Carman or Joyce, of Newgate Street, and a Waltonian to propagate with in spring. We make it a rule not to name plants without seeing them.—*X. X. X.*—If you want something choice in that narrow border, put in two feet depth of good peat and a selection of hybrid rhododendrons. The ground between must not be turfed. See Vol. iii. p. 227, and Vol. iv. p. 27. Best climbers for your verandahs in your climate, *Clematis montana*, *Clematis flammula*, Boursault roses, and *Wistaria sinensis*—the last is the grandest hardy climber known.—*From the Beginning*.—The use of a glazed earthen pipe for a chimney to Musgrave's stove is, because it does not cool so quick as iron, and metal pipe will put the fire out on a very cold night by becoming too cold to keep up a draught. If the fire goes direct into a brick chimney a metal pipe will do; but the latter will not do to be exposed to the air.—*J. W. K., Cleveland Road*.—Put a cork in the tube, the boiler won't explode, but a zinc cap is better than a cork, because fitting loosely. You will see in the drawings that a metal cap is used.—*No Name*.—The Sikkim rhododendrons will live out of doors in Wales, but will probably never flower except under glass; but they do not need artificial heat. It would be worth while to leave yours out, expressly to test what *Thompsonii* will do in Carmarthenshire.—*Constant Reader*.—You do not use the lime fresh enough to kill the slugs. When fresh from the kiln it is instant death to every one it touches. You may use salt on the land at the rate of twenty-five bushels per acre, and the best time is the month of March. Salt will kill or injure every plant it touches, but is one of the most valuable manures. Brewers' grains make the best traps for slugs and snails.—*Maude*.—Nothing but warmth will prevent the grapes damping. We cannot advise about the stove, not knowing the size of the house; but a stove of some sort is certainly wanted.

THE  
FLORAL WORLD  
AND  
GARDEN GUIDE.

---

DECEMBER, 1862.



COCOA-NUT WASTE is inquired about so anxiously by our correspondents that we feel called upon to restate a few of the facts that have been published respecting it in the FLORAL WORLD, and to add thereto a few additional particulars. It is sometimes described as "cocoa-nut dust," at other times as "cocoa-nut fibre;" but it is neither dust nor fibre in the usual sense of those terms. In the manufacture of cordage, mats, etc., from the outer husk of the cocoa-nut, there is a considerable amount of waste material produced, and this consists usually of a brown granular substance resembling mahogany sawdust mixed with bristles and tufts of the real fibre. The chief bulk is the sawdust-like material; if threads of fibre predominated, the material would be far less valuable than it is. It may seem to many of our readers, a waste of words to describe the cocoa-nut waste even so briefly, but it appears that several very different materials are sold under the same name, and we must distinguish between the reality and its counterfeits.

Now there has been much said about this stuff and its uses in horticulture in this and other journals; and our readers know pretty well that it is by many regarded as indispensable in certain horticultural processes. In the first place, it is the best plunging material we have ever yet seen. It retains moisture like tan or hops, has a great power of resisting frost and excessive sun-heat, on account of its comparatively nonconducting nature, the result, probably, of its loose texture and the consequent entanglement of a mass of atmospheric air in the bulk. But it surpasses tan or hops for plunging, by its constant cleanliness. We have used it over three years, and never yet saw the slightest trace of any fungus in it, to which hops and tan are very subject, the first especially, and sometimes to the injury of the plants bedded in the substance. It has been said that vermin hate the cocoa waste, which is a mistake; slugs and snails will travel great distances to take shelter in a bed of it, but woodlice and most other of the active class of pests infesting the roots of plants are seldom to be found in it. As for the slugs, they harbour under the pots plunged in the material,

and it thus becomes one of the best of traps ; in fact, these marauders may be kept down most effectually by making up a plunge-bed in a garden infested with them, filling the bed with potted plants, and making a search, by removing the pots once or twice a-week, for the destruction of the slugs found in the holes from which the pots were removed. There is no plunging material into which plants will not root if allowed ; and plants that have filled their pots with roots soon push new roots into the cocoa waste, and take hold of it so firmly, that after being neglected for some time, it is no easy matter to remove them without injury. But this is no objection to its use ; the same thing happens with hops, tan, moss, and even coal-ashes ; but the eagerness with which plants plunged in this material push their roots into it proves that it is capable of higher uses than as a material for plunging merely.

Cuttings of all kinds, whether of hard-wooded or soft-wooded plants, make root rapidly in the cocoa waste, and the roots being in little mats in a loose material, are easily separated for potting, without harm to the tenderest of their spongioles. For the work of the propagator it is invaluable. With one hollow crock over the hole of the pot, and a sprinkle of the most fibrous part of the material over that, the pot is perfectly drained, the fibre will be found almost as sound and open after the plant has been potted a year as in the first instance ; in fact, it decays so slowly, that it may be used again and again for plunging, mulching, draining, etc., without much change occurring in its constitution, though as it rots it increases in value, and is more and more fitted for the growth of ferns and fine-leaved plants.

The best mode of using it is to appropriate it in bulk first for plunging. It is always clean, and when moist its rich dark brown colour gives a bed of potted plants a very neat and agreeable appearance, very different indeed to the sour look of hops or the dinginess of coal-ashes. After being in the plunge-bed a couple of years, it will be coming into good condition for the propagator, and to take the place of bog and peat earths for ferns, rhododendrons, and other plants with fine hair-like leaves. We have found it admirably suited for striking cuttings of roses, calceolarias, shrubby veronicas, fuchsias, and generally for every class of plants which require to be kept uniformly moist, and if in this respect it has any pre-eminent or distinct value, it is for cuttings which are very slow to root, such as ericas, as the material can scarcely be made very wet, and never becomes utterly dry ; in fact, it is never dry unless placed in an oven.

Ferns of nearly all kinds literally riot in it. We have observed among very many trials of it in fern culture but one exception to its general applicability to this purpose, and that is with *Gymnogrammas*. In describing Pickard's plant-case we remarked that all the ferns in our cases are planted in this material *alone*, and are all in the most robust health. But we omitted then to remark that some *Gymnogrammas* had refused to take hold of it, but when removed and planted in turfy peat in another case similarly treated as to temperature, etc., they prospered satisfactorily, which was something like a proof that the cocoa waste does not agree with them. But we are never in haste to draw general conclusions from meagre data, and it may yet prove that the *Gymnogrammas* are as partial to it as most other ferns.

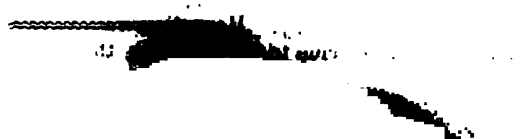
It may be asked how it is that a material consisting almost wholly of lignin, and which, comparatively speaking, resists decomposition so



effectually, should prove so well adapted for these plants. We cannot undertake to explain the reason why this material should be apparently so exceptional. But this is certain, that ferns require little else for their nourishment except moisture and carbonic acid, and it is quite certain that in the slow decomposition of the mass there is a constant evolution of carbonic acid, and this may be the reason why almost any kind of fern will grow in it, and some better than in any other material. By reference to the description of Pickard's plant-case, the reader will see a list of species which we have growing in the material. We may add to that, that we have some fleshy-leaved ferns, such as *Nipholobolus pertusus*, *lingua*, etc., doing as well as the most flimsy-fronded kinds, but the material is modified to suit their constitution: by an admixture of one-third small lumps of turf and potsherds broken almost to dust—the latter, by the way, a most valuable ingredient to mix in composts for plants that are touchy as to any excess of moisture at the roots. But above all, this is the very best material in which to pot seedling ferns and young plants obtained by division of creeping rhizomes, as they quickly make masses of roots in it, and turn out without losing a particle from the ball, so as literally not to feel the shift at all. This is our uniform experience with the material, that the young plants lift well, as well as when rooted in moss, and with less difficulty of separating them; as moss, however finely chopped, is sure to encourage some entanglement of the young roots.

But it is still true that there is not much nourishment in the cocoa waste, and it should not be used alone for strong-growing flowering plants, nor for strong-growing ferns. One half of the cocoa dust, and one half Wanstead loam, make a first-rate mixture for specimen fern culture, and for begonias, caladiums, and all delicately-constituted plants. Its retention of moisture and peaty character is just what the roots of such plants like, and for growing on after the first shift, a third or half of turfy loam should be added. For specimen roses, chrysanthemums, and other plants that like a strong soil, it is not suitable; these may be rooted in it to perfection in the first instance, and then should have the composts in which they have hitherto been grown.

There are two other uses of the material to be mentioned. It is the best of all ameliorators for stiff clays and pasty loams; it renders them friable, keeps them open for the admission of air, and prevents cracking of the surface during drought. Those who can get it cheap may dig it in wholesale on stiff soils for fruit-trees, strawberries, and in fact for anything. Another use for it is as a mulching material. Of course it will not take the place of dung where a stimulating mulch is required, but to keep the surface moist and clean there is nothing like it. Those who live near cocoa-nut fibre works, and have, therefore, little to pay for carriage of the waste, may use it abundantly to cover the ground of their strawberry plantations to keep the fruit clean and improve its quality by the uniform moist condition in which it will keep the roots of the plants, and the absorption of sun-heat in consequence of its dark colour. We might say much more in its praise, but space is precious, and we have, perhaps, said enough for the information of those correspondents who wish for something more than a brief reply in the ordinary place to their interrogations.



board ship, you may weave in the rest. Tarr'd cord, I must remind you, is not to be much used; it is useful in gardens, because a ring of it round a tree keeps hares and insects away; but in a flower garden it should never be used where it can brush against people, as it stains their clothes. If you want, however, to preserve your string, and keep your house in repair, you will paint over the cord you use with a little dark green paint, when it is used low down.

"The roof then has to be all wattled over. You can fancy easily how to work the willows, or "sallies," in and out, making a nice firm trellis. If you are really so ambitious as to wish the roof to be waterproof, you must make the framework very close indeed, and then you can lay on it a quantity of green moss, with the green side downwards; and then nail a piece of felt on, and cover that again with a fresh moss thatching, or even with one of straw. These roofs are very useful, but not half so pretty as a mere rustic shade; and if your garden is very near the house, I think it is a pity to spoil the look for such a doubtful pleasure. The roof requires, too, to be much higher on one side than on the other when you have it waterproof, and this sadly does away with the pretty Italian or Japanese square trellis.

"I think that flower gardens are mere summer pleasures, and in summer we want shade chiefly. In full view of the house, at any rate, you do not want a summer-house; so unless you are far away I am an advocate of the trellis plan, which is done so easily and always looks so nice.

"Having made your roof, you next may construct the walls, which is quite reversing all proper house building order. Nothing hardly is prettier than a crossed fence here again—a row of long sticks leaning one way, and another row going the other, on three of the sides of the six-sided bower. The interstices can be as large or as small as you like; or I have seen such bowers looking extremely pretty without any walls at all, and only surrounded by the six strong pillars. It

is an important question what to plant by these pillars.

"I think myself that each should have something evergreen, and then any extra flowers make it immensely gay. Many people like to have ivy, for when it grows well, nothing looks prettier, both in summer and winter; and there is also a delightful evergreen rose which does well in warm places; or you might have an evergreen shrub planted at each corner, besides many other things. Privet is very pretty, and makes a beautiful close green; I think it is quite a shame that it is so turned out of flower gardens, for unless myrtles grow well, as they do in the Isle of Wight, few plants are greener.

"A pretty box tree would do well here, too, or a little holly very well indeed, and then you would have at Christmas holly and ivy of your own peculiar growth. You ought to plant some evergreens if you mean to have a garden full of spring flowers in the early spring, which I would not miss for anything. Then there should be a vine or perhaps a Virginian-creeper, which grows very quickly and has red leaves in autumn, which hang on amidst the ivy for a long while sometimes.

"The ivy itself does not always grow very fast. People seem to fancy that it will grow anywhere, and does not want any care, which is a great mistake. If it were planted in plenty of good leaf-mould, like that which it would meet with under the trees in woods, and up against old walls, where heaps of leaves have laid till they have decayed, and if it were kept well watered, it would grow a great deal quicker, and cover all the framework in about half the time it takes when left alone. Have you ever noticed the pink China roses, growing amidst dark ivy and peeping out here and there? Even in the winter they will often look so pretty, and if any one should chance to have a tall holly tree, or an ivy-grown wall, by which they can plant a flower, I much advise them to put in a China rose, and some roots of great white convolvulus, or the kind called Calystegia.

"Sweet peas sown in-doors ;

January, and also *Nasturtiums* and *Canariensis* sown in the ground in autumn, will make a great show in the first year, and *Cobea scandens*, also being sown in-doors in pots, may be grown quite spreading in time to plant out in May.

"*Jessamines*, too, and *honeysuckle* do beautifully; indeed, the prettiest quite that I have ever seen of these trellised bowers have been covered with ivy, with roses, and *honeysuckles*, and perhaps a vine and *clematis*, or white *jessamine*.

"The vine should be cut back a little in each autumn, because then the young shoots in spring will be greener and closer.

"Of course, when the trellis is covered you will want some seats, and, I dare say, a table; that would be a charming plan to have, instead of a table only, a bark basket containing growing ferns. And the seat could be made of twisted branches, too, or some wicker chairs might be painted green or brown.

"The basket of ferns would thrive most charmingly in the shade, and I am sure you would delight, in each new place you went to, in collecting ferns to add to those growing in it.

"I may just add a hint that many little plants which grow on walls and in clefts of trees, would look pretty on the roof of your garden house."

### DECEMBER, 1862.—31 DAYS.

PHASES OF THE MOON.—Full, 6th, 7h. 38m. morn.; Last Quarter, 14th, 10h. 33m. morn.; New, 21st, 5h. 4m. morn.; First Quarter, 27th, 11h. 44m. even.

| D<br>M | Sun<br>rises. | Sun<br>sets. | Weather near London, 1861. |        |              |     |      |                          | Rain.                           | THE COUNTRY. |
|--------|---------------|--------------|----------------------------|--------|--------------|-----|------|--------------------------|---------------------------------|--------------|
|        |               |              | BAROMETER.                 |        | THERMOMETER. |     |      | Rural Sights and Sounds. |                                 |              |
|        |               |              | Mx.                        | Min.   | Mx.          | Mn. | Me.  |                          |                                 |              |
|        | h. m.         | h. m.        |                            |        |              |     |      |                          |                                 |              |
| 1      | 7 45          | 3 53         | 30.245                     | 29.808 | 51           | 23  | 37.0 | .00                      | All deciduous trees leafless    |              |
| 2      | 7 46          | 3 52         | 30.674                     | 30.295 | 50           | 20  | 35.0 | .00                      | Common groundsel flowers        |              |
| 3      | 7 48          | 3 51         | 30.214                     | 30.105 | 53           | 16  | 34.5 | .00                      | Houseflies disappear            |              |
| 4      | 7 50          | 3 51         | 30.114                     | 29.821 | 52           | 23  | 37.5 | .30                      | Ivy berries ripen               |              |
| 5      | 7 51          | 3 50         | 29.744                     | 29.693 | 49           | 22  | 35.5 | .00                      | Thelotrema on holly bark        |              |
| 6      | 7 52          | 3 50         | 29.671                     | 29.271 | 51           | 40  | 45.5 | .46                      | Hollyberries ripen              |              |
| 7      | 7 53          | 3 50         | 29.384                     | 29.195 | 60           | 34  | 47.0 | .00                      | Dandelion flowers               |              |
| 8      | 7 55          | 3 49         | 29.674                     | 29.414 | 55           | 39  | 47.0 | .23                      | Shepherds' purse flowers        |              |
| 9      | 7 56          | 3 49         | 29.832                     | 29.788 | 59           | 36  | 47.5 | .00                      | Common chickweed flowers        |              |
| 10     | 7 57          | 3 49         | 29.783                     | 29.737 | 57           | 32  | 44.5 | .01                      | Skylarks congregate             |              |
| 11     | 7 58          | 3 49         | 30.040                     | 29.988 | 56           | 37  | 46.5 | .06                      | Polyanthus flowers              |              |
| 12     | 7 59          | 3 49         | 29.876                     | 29.659 | 54           | 44  | 49.0 | .04                      | Wild ducks on inland marshes    |              |
| 13     | 8 0           | 3 49         | 29.460                     | 29.384 | 54           | 34  | 44.0 | .06                      | Greenfinches congregate         |              |
| 14     | 8 1           | 3 49         | 30.029                     | 29.885 | 53           | 39  | 46.0 | .00                      | Mistletoe berries ripen [places |              |
| 15     | 8 2           | 3 49         | 30.147                     | 30.119 | 53           | 40  | 46.5 | .07                      | Furze flowers in sheltered      |              |
| 16     | 8 3           | 3 49         | 30.190                     | 30.124 | 51           | 40  | 45.5 | .00                      | Colt's-foot flowers [weather    |              |
| 17     | 8 3           | 3 49         | 30.167                     | 30.012 | 49           | 35  | 42.0 | .00                      | Hepatica flowers in mild        |              |
| 18     | 8 4           | 3 50         | 29.944                     | 29.899 | 46           | 36  | 41.0 | .00                      | Primroses flower in sheltered   |              |
| 19     | 8 5           | 3 50         | 30.222                     | 30.177 | 45           | 30  | 37.5 | .00                      | Chaffinches flock [places       |              |
| 20     | 8 5           | 3 50         | 30.376                     | 30.303 | 42           | 35  | 38.5 | .00                      | Marsh titmouse sings            |              |
| 21     | 8 6           | 3 51         | 30.380                     | 30.233 | 41           | 37  | 39.0 | .00                      | Glaucous Riccia on rocks        |              |
| 22     | 8 6           | 3 51         | 30.205                     | 30.194 | 45           | 36  | 40.5 | .00                      | Moles throw up hillocks         |              |
| 23     | 8 7           | 3 52         | 30.270                     | 30.250 | 45           | 33  | 39.0 | .00                      | Colymbetes fuliginosus          |              |
| 24     | 8 7           | 3 52         | 30.286                     | 30.176 | 45           | 30  | 37.5 | .00                      | Drab-day moth                   |              |
| 25     | 8 8           | 3 53         | 30.169                     | 30.092 | 46           | 18  | 32.0 | .00                      | Leprelia abundant at seaside    |              |
| 26     | 8 8           | 3 54         | 30.300                     | 30.200 | 35           | 20  | 27.5 | .00                      | Tremella on dead wood           |              |
| 27     | 8 8           | 3 55         | 30.499                     | 30.433 | 40           | 25  | 32.5 | .00                      | Nidularia on dung-heaps         |              |
| 28     | 8 8           | 3 55         | 30.454                     | 30.409 | 39           | 30  | 34.5 | .00                      | Carabus morbillosus             |              |
| 29     | 8 8           | 3 56         | 30.414                     | 30.327 | 31           | 22  | 26.5 | .00                      | Graphis stricta on bark         |              |
| 30     | 8 8           | 3 57         | 30.380                     | 30.336 | 36           | 24  | 30.0 | .01                      | Yellow hue Quaker moth          |              |
| 31     | 8 9           | 3 58         | 30.868                     | 30.239 | 39           | 29  | 34.0 | .00                      | December moth                   |              |

board ship, you may weave in the rest. Tarr'd cord, I must remind you, is not to be much used; it is useful in gardens, because a ring of it round a tree keeps hares and insects away; but in a flower garden it should never be used where it can brush against people, as it stains their clothes. If you want, however, to preserve your string, and keep your house in repair, you will paint over the cord you use with a little dark green paint, when it is used low down.

"The roof then has to be all wattled over. You can fancy easily how to work the willows, or "sallies," in and out, making a nice firm trellis. If you are really so ambitious as to wish the roof to be waterproof, you must make the framework very close indeed, and then you can lay on it a quantity of green moss, with the green side downwards; and then nail a piece of felt on, and cover that again with a fresh moss thatching, or even with one of straw. These roofs are very useful, but not half so pretty as a mere rustic shade; and if your garden is very near the house, I think it is a pity to spoil the look for such a doubtful pleasure. The roof requires, too, to be much higher on one side than on the other when you have it waterproof, and this sadly does away with the pretty Italian or Japanese square trellis.

"I think that flower gardens are mere summer pleasures, and in summer we want shade chiefly. In full view of the house, at any rate, you do not want a summer-house; so unless you are far away I am an advocate of the trellis plan, which is done so easily and always looks so nice.

"Having made your roof, you next may construct the walls, which is quite reversing all proper house building order. Nothing hardly is prettier than a crossed fence here again—a row of long sticks leaning one way, and another row going the other, on three of the sides of the six-sided bower. The interstices can be as large or as small as you like; or I have seen such bowers looking extremely pretty without any walls at all, and only surrounded by the six strong pillars. It

is an important question what to plant by these pillars.

"I think myself that each should have something evergreen, and then any extra flowers make it immensely gay. Many people like to have ivy, for when it grows well, nothing looks prettier, both in summer and winter; and there is also a delightful evergreen rose which does well in warm places; or you might have an evergreen shrub planted at each corner, besides many other things. Privet is very pretty, and makes a beautiful close green; I think it is quite a shame that it is so turned out of flower gardens, for unless myrtles grow well, as they do in the Isle of Wight, few plants are greener.

"A pretty box tree would do well here, too, or a little holly very well indeed, and then you would have at Christmas holly and ivy of your own peculiar growth. You ought to plant some evergreens if you mean to have a garden full of spring flowers in the early spring, which I would not miss for anything. Then there should be a vine or perhaps a Virginian-creeper, which grows very quickly and has red leaves in autumn, which hang on amidst the ivy for a long while sometimes.

"The ivy itself does not always grow very fast. People seem to fancy that it will grow anywhere, and does not want any care, which is a great mistake. If it were planted in plenty of good leaf-mould, like that which it would meet with under the trees in woods, and up against old walls, where heaps of leaves have laid till they have decayed, and if it were kept well watered, it would grow a great deal quicker, and cover all the framework in about half the time it takes when left alone. Have you ever noticed the pink China roses, growing amidst dark ivy and peeping out here and there? Even in the winter they will often look so pretty, and if any one should chance to have a tall holly tree, or an ivy-grown wall, by which they can plant a flower, I much advise them to put in a China rose, and some root of great white convolvulus, or the kind called Calystegia.

"Sweet peas sown in-doors ;

January, and also *Nasturtiums* and *Canariensis* sown in the ground in autumn, will make a great show in the first year, and *Cobea scandens*, also being sown in-doors in pots, may be grown quite spreading in time to plant out in May.

"*Jessamines*, too, and *honeysuckle* do beautifully; indeed, the prettiest quite that I have ever seen of these trellised bowers have been covered with ivy, with roses, and *honeysuckles*, and perhaps a vine and *clematis*, or white *jessamine*.

"The vine should be cut back a little in each autumn, because then the young shoots in spring will be greener and closer.

"Of course, when the trellis is covered you will want some seats, and, I dare say, a table; that would be a charming plan to have, instead of a table only, a bark basket containing growing ferns. And the seat could be made of twisted branches, too, or some wicker chairs might be painted green or brown.

"The basket of ferns would thrive most charmingly in the shade, and I am sure you would delight, in each new place you went to, in collecting ferns to add to those growing in it.

"I may just add a hint that many little plants which grow on walls and in clefts of trees, would look pretty on the roof of your garden house."

## DECEMBER, 1862.—31 DAYS.

PHASES OF THE MOON.—Full, 6th, 7h. 38m. morn.; Last Quarter, 14th, 10h. 33m. morn.; New, 21st, 5h. 4m. morn.; First Quarter, 27th, 11h. 44m. even.

| D<br>M | Sun<br>rises. | Sun<br>sets. | Weather near London, 1861. |        |              |     |      |                         | Rain.                           | THE COUNTRY. |
|--------|---------------|--------------|----------------------------|--------|--------------|-----|------|-------------------------|---------------------------------|--------------|
|        |               |              | BAROMETER.                 |        | THERMOMETER. |     |      | Rural Sight and Sounds. |                                 |              |
|        |               |              | Mx.                        | Min.   | Mx.          | Mn. | Me.  |                         |                                 |              |
|        | h. m.         | h. m.        |                            |        |              |     |      |                         |                                 |              |
| 1      | 7 45          | 3 53         | 30.245                     | 29.808 | 51           | 23  | 37.0 | ·00                     | All deciduous trees leafless    |              |
| 2      | 7 46          | 3 52         | 30.674                     | 30.295 | 50           | 20  | 35.0 | ·00                     | Common groundsel flowers        |              |
| 3      | 7 48          | 3 51         | 30.214                     | 30.105 | 53           | 16  | 34.5 | ·00                     | Houseflies disappear            |              |
| 4      | 7 50          | 3 51         | 30.114                     | 29.821 | 52           | 23  | 37.5 | ·30                     | Ivy berries ripen               |              |
| 5      | 7 51          | 3 50         | 29.744                     | 29.693 | 49           | 22  | 35.5 | ·00                     | Thelotrema on holly bark        |              |
| 6      | 7 52          | 3 50         | 29.671                     | 29.271 | 51           | 40  | 45.5 | ·46                     | Hollyberries ripen              |              |
| 7      | 7 53          | 3 50         | 29.384                     | 29.195 | 60           | 34  | 47.0 | ·00                     | Dandelion flowers               |              |
| 8      | 7 55          | 3 49         | 29.674                     | 29.414 | 55           | 39  | 47.0 | ·23                     | Shepherds' purse flowers        |              |
| 9      | 7 56          | 3 49         | 29.832                     | 29.788 | 59           | 36  | 47.5 | ·00                     | Common chickweed flowers        |              |
| 10     | 7 57          | 3 49         | 29.783                     | 29.737 | 57           | 32  | 44.5 | ·01                     | Skylarks congregate             |              |
| 11     | 7 58          | 3 49         | 30.040                     | 29.988 | 56           | 37  | 46.5 | ·06                     | Polyanthus flowers              |              |
| 12     | 7 59          | 3 49         | 29.876                     | 29.659 | 54           | 44  | 49.0 | ·04                     | Wild ducks on inland marshes    |              |
| 13     | 8 0           | 3 49         | 29.460                     | 29.384 | 54           | 34  | 44.0 | ·06                     | Greenfinches congregate         |              |
| 14     | 8 1           | 3 49         | 30.029                     | 29.885 | 53           | 39  | 46.0 | ·00                     | Mistletoe berries ripen [places |              |
| 15     | 8 2           | 3 49         | 30.147                     | 30.119 | 53           | 40  | 46.5 | ·07                     | Furze flowers in sheltered      |              |
| 16     | 8 3           | 3 49         | 30.190                     | 30.124 | 51           | 40  | 45.5 | ·00                     | Colt's-foot flowers [weather    |              |
| 17     | 8 3           | 3 49         | 30.167                     | 30.012 | 49           | 35  | 42.0 | ·00                     | Hepatica flowers in mild        |              |
| 18     | 8 4           | 3 50         | 29.944                     | 29.899 | 46           | 36  | 41.0 | ·00                     | Primroses flower in sheltered   |              |
| 19     | 8 5           | 3 50         | 30.222                     | 30.177 | 45           | 30  | 37.5 | ·00                     | Chaffinches flock [places       |              |
| 20     | 8 5           | 3 50         | 30.376                     | 30.303 | 42           | 35  | 38.5 | ·00                     | Marsh titmouse sings            |              |
| 21     | 8 6           | 3 51         | 30.380                     | 30.233 | 41           | 37  | 39.0 | ·00                     | Glaucous Riccia on rocks        |              |
| 22     | 8 6           | 3 51         | 30.205                     | 30.194 | 45           | 36  | 40.5 | ·00                     | Moles throw up hillocks         |              |
| 23     | 8 7           | 3 52         | 30.270                     | 30.250 | 45           | 33  | 39.0 | ·00                     | Colymbetes fuliginosus          |              |
| 24     | 8 7           | 3 52         | 30.286                     | 30.176 | 45           | 30  | 37.5 | ·00                     | Drab-day moth                   |              |
| 25     | 8 8           | 3 53         | 30.169                     | 30.092 | 46           | 18  | 32.0 | ·00                     | Leprelia abundant at seaside    |              |
| 26     | 8 8           | 3 54         | 30.300                     | 30.200 | 35           | 20  | 27.5 | ·00                     | Tremella on dead wood           |              |
| 27     | 8 8           | 3 55         | 30.499                     | 30.433 | 40           | 25  | 32.5 | ·00                     | Nidularia on dung-heaps         |              |
| 28     | 8 8           | 3 55         | 30.454                     | 30.409 | 39           | 30  | 34.5 | ·00                     | Carabus morbillosus             |              |
| 29     | 8 8           | 3 56         | 30.414                     | 30.327 | 31           | 22  | 26.5 | ·00                     | Graphis stricta on bark         |              |
| 30     | 8 8           | 3 57         | 30.380                     | 30.336 | 36           | 24  | 30.0 | ·01                     | Yellow hue Quaker moth          |              |
| 31     | 8 9           | 3 58         | 30.368                     | 30.239 | 39           | 29  | 34.0 | ·00                     | December moth                   |              |

## NOTES FOR THE GARDEN.

**KITCHEN GARDEN.**—Make plantations of rhubarb, seakale, asparagus, and horse-radish. Roots of dandelion, packed together in leaf-mould, and put into gentle heat, will furnish a delicate salad in five or six weeks. Paskall's seakale pots are best for the purpose. Keep dung and all soluble matters under cover. Turn over manures, and put aside in heaps to be frozen, rotted leaves, and other materials suitable for potting, and when well sweetened and pulverized, remove to bins in the potting-shed to keep dry for use. Get sticks and stakes tied up in bundles ready for use; wheel turf and weeds to the muck-pit; get pots washed and sorted over, and crocks sifted into sizes for the potting-bench.

**FRUIT GARDEN.**—Let nothing lie in by the heels an hour longer than can be helped. Bush fruits properly taken up and properly planted ought not to miss the move in the slightest degree, but you are sure to lose a whole season if they lie about waiting to be planted. Root-prune any trees that grow too luxuriantly to bear well. Lay boards in a slope over vine borders, to shelter them from excessive cold-rains. Unnail from the walls the

younger shoots of tender wall-trees, to prevent premature breaking. Strawberry-beds may be made this month, but there is no certainty of a crop if left so late.

**FLOWER GARDEN.**—Keep everything as tidy as possible. If any bulbs remain out of the ground, get them in without delay. Take up tea-roses, and lay in by the heels in a shed, out of reach of frost. Cut down fuchsias that are to remain out all the winter, and cover their roots with coal ashes. Pansies, pinks, and other choice things in open beds, should have a little light litter sprinkled over them in frosty weather, or be protected with canvas on hoops; tulips protect in the same way. Keep auriculas and other plants in frames moderately dry, and free of dead leaves.

**GREENHOUSE AND STOVE.**—Vines that are forward will want frequent attention and a very regular heat. Ericas must have air at every opportunity, and if brought in with flowering shrubs to be forced, must be very gently stimulated, as they are impatient of heat. Soft-wooded plants must have fire-heat during foggy weather as well as during frost. Greenhouse, 40° to 45°. Vines started 60° by day.

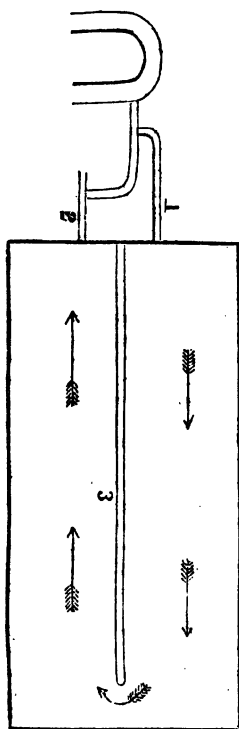
---

## TO CORRESPONDENTS.

**PIT FOR PROPAGATING AND THE GROWTH OF MELONS.**—I have a cold brick-pit ten feet long, by five feet wide, and rising three feet six inches at the back, which I want to heat with bottom heat, so as to be able to propagate bedding plants in spring, and to grow cucumbers or melons in afterwards. Will you kindly assist me, by informing me, how I can accomplish this in the *cheapest* manner by means of a brick or tile pipe flue, and how the stove or fireplace should be placed in one end so as to secure sufficient draught for the flue. The pit, being inside, rather below the level of the ground, I suppose the fireplace must be sunk in the ground outside, low enough to admit of a slight rise to the flue? or would it be better to build the pit a little higher, so as to admit of the flue being placed level with the ground outside? Would you tell me also what sort of stove or fireplace is the *most economical in fuel*, and had I better have

it built into one end of the pit or not? I thought of having a small brick Arnot stove built into one end, but I see Mr. Rivers, in "The Orchard House," states that these stoves will not do with a horizontal flue of a greater length than three feet.—*Amateur B.* [We apprehend that the kind of heat generated by the plan you propose, of carrying a flue through your pit, would not be congenial either for the growth of cucumbers, or the propagation of bedding-plants. It would be a dry and irregular heat instead of a moist and constant one. If, instead of constructing a flue, you make a hot-water tank of the whole area of the inside of the pit, so as to contain six inches in depth of water, and attach a small boiler to be fixed outside, a constant and genial warmth would be obtained at a small expense of time and fuel. Raise both the back and front walls of your pit twelve or fifteen inches, then procure some flagstones, or as it is

commonly called, Yorkshire paving, large enough to reach across the pit, or if more convenient, the breadth may be spanned by two pieces, the middle edges resting on a course or two of bricks as the case may be. Let this stone pavement be laid exactly level, two feet nine inches from the top of the brick part of the pit, then lay two courses of bricks all round the outside of the pavement in cement; on the top of these two courses, lay one brick on edge embedded firmly in cement; this will leave a small ledge



1, Flow; 2, Return; 3, Brick division.

on which to rest some slates, on which to lay the mould, etc. Also make a division in the centre, with two courses of bricks in cement, leaving a small space at the end farthest from the boiler, so that the water may circulate. After this is done cover the whole with slates, two slates will reach across, one edge resting on the ledge of the outer wall, and the other resting halfway over the middle wall; secure each end with cement, and

also let some stiff cement be applied to the joints to render them impervious to the steam, which will sodden the roots of the plants or cuttings, if allowed to escape through into the soil. This arrangement will give two feet of clear space for mould and plants at the back of the pit, and thirteen inches in front; an average foot of soil all over the bed, making it a little deeper at the back and somewhat shallower in the front, will be found to be ample for anything that may be grown in the pit. The flow and return pipes from the boiler must be inserted into the tank in the first course of brick, half an inch from the stone, so that the settleings of the water may not penetrate into the boiler. The advantage of raising the pit will be, that it will not be necessary to make the stoke-hole so deep. This arrangement will cost very little, if any, more than a brick flue, and will be entirely satisfactory.]

#### ERYTHRINA CRISTA GALLI.—E.A.W.—

This is very readily propagated by taking off the young shoots from the crown when they are three or four inches in length, and striking them in sand in heat under a bell-glass. Or, when the plant has flowered, cut the shoot into lengths, with an eye and a leaf attached to each piece, insert in sand in heat as before, and they will strike as readily as the eyes of a vine or a rose.

#### GREENHOUSE CONSTRUCTION.—C. E. H.—

The flue will heat your house much more efficiently than a stove, and the flue will be better carried all round as at A in the plan. By carrying it round as at B, a large space will be both awkward to get at and difficult to occupy profitably. Either carry the centre of the house six inches higher, or reduce the framework to three feet six inches, so as to give a sharper pitch to the roof; by this plan you will have less drip, and a larger amount of benefit from the winter's sun. The brick-work need not be more than four inches; you cannot have your fireplace and chimney in a better position, try to secure a small rise in the flue from beginning to end, no matter how little, so as it is a rise. Two-inch deal will be strong enough for the lights, but you must use quartering for the door-posts, uprights, rafters, and plates. As to the question of removal, to be quite safe, you had better lay some timber on the surface of your ground, and put the entire erection upon it; there will then not be the slightest quibble or difficulty about it.

EVERGREEN CRATE.—Can you tell me

numberless converts, many of whom have succeeded perfectly with their trees, but as the necessary knowledge is not possessed by all who betake themselves to the culture of pot trees—as I can testify from observations made on visiting some orchard-houses during the past summer—it may not be amiss to consider the subject somewhat in detail for the benefit of such. It is possible to deduce facts from failures, which, if properly considered, show us wherein we are in error. Now I fancy that if I describe a house of trees, in what a critic would consider an unsatisfactory state, and one as occasionally seen under the care of a thorough good gardener, I may enable my readers to judge how far their several charges approach to either the one or the other. If on entering an orchard-house, a pale or yellowish hue seem to pervade the foliage, it is a sign of the presence of red spider, and red spider is a sure attendant upon starved or suffocated trees, rendering their leanness still worse by sucking from the foliage the juices that should be there elaborated to recruit the stamina of the trees, and enable them to carry their crops to perfection. If badly affected with this pest, the trees often shed their fruit, or if it ripen, it is small and flavourless, the wood of the tree becomes weak and attenuated, and unfit to carry a crop the following year. In such a house a practical gardener would perceive an undue amount of heat, or a dry, uncomfortable atmosphere. If he touched the soil in the pots, he would probably find it approaching dryness; besides which he might perceive that the pots were much too small for the size of the trees. If he inquired further, he would find that the trees had not been syringed until the spider had actually made its appearance, and then perhaps not in a business-like manner (a dewing over with the syringe is not enough; they must be battered on all sides, and especially the undersides of the leaves); that they received water at the root by rule, say once a-day, and then, perhaps, in homœopathic doses.

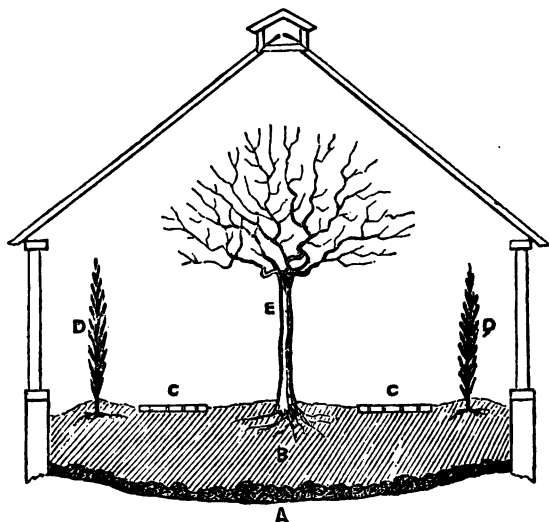
On the other side, to go into a house where the trees are well cared for, the foliage is luxuriant, of the colour of a Portugal laurel, the air soft and moist, the trees in pots proportioned to the size of the tree. The soil, whether in the pots or the borders on which they stand, rich and mellow, and perhaps mulched with short stable litter to protect the pots from the direct rays of the sun. If he investigated further he would find that the soil consisted of half-decayed turves, old cow-dung, and a sprinkling of soot and bone-dust; that water was filtered through soot and cow-dung, to mix at discretion with the soft water which was applied, not by rule, but according to circumstances, once a-week, once a-day, or three times a-day, if they demanded it; that as much old soil as could be removed from the top of the pot, without injury to the roots, was every winter removed and fresh supplied. That the trees at the same time were dressed with a mixture of soft soap and sulphur, and the walls washed with lime and sulphur; further, that green-fly had been carefully looked for in spring, and the moment it was perceived, syringed with tobacco-wash, or fumigated with tobacco paper. That the blossoms had been brushed over with a soft brush to distribute the pollen, and thus secure the setting of a regular crop of fruit, and that the fruit when thus set had been early thinned, so as not to waste the energies of the trees. That cold winds and severe frosts had been denied free egress, by closing the ventilators on the windward side; yet that perfect ventilation had never been omitted when it could be safely permitted; that the syringe, or what is better, a small engine, had been constantly used every morning (since the setting of the fruit), when there was a prospect of a clear day; and again every bright and warm afternoon, just before the sunbeams ceased to play upon the house. My readers will be enabled now to judge how far their practice has fallen short of the above, and perhaps feel appalled at the amount of attention apparently necessary to perfect success in the



pot culture of fruits, yet the attention is necessary, *and it is attention to the minutiae* that makes the successful gardener. This I know many amateurs cannot find time for, hence the observations I am about to make, which would, I doubt not, if carried out, enable persons so situated to reap a crop with greater certainty than by the pot system.

The plan I mean is to plant out the trees in prepared borders, so as to render them less susceptible of injury from slight neglects; the plan is by no means new, it has been advocated by several writers, and is practised by many of the best gardeners of the

fully kept in view in the accompanying sketch, and as such a house could be erected at as little cost as it is possible to erect an efficient structure, I shall not be wasting space in describing it. It is set upon nine-inch brick foundations, which rise nine inches above the ground level. Upon these a plate of oak timber is laid; into this deal studs, three feet apart, are morticed, and on them again, at the height of five feet, a plate of deal is laid to receive the rafters and astrigals, or bars into which the glass is glazed. The superstructure at the top is for the purpose of giving air, and is composed of thin boards, the



A

day, but usually in houses of greater pretensions than Mr. Rivers's orchard-house. Yet these houses of Mr. Rivers are as well adapted for the planting out as for the pot system; the difference required is in the preparation of the border, the form of the house mattering but little, so long as no fundamental principles are violated, and these are, a situation open to the south, or thereabout; glass to the ground, or nearly so, that all the light possible may be admitted, and plenty of opening ventilators, that there may be no lack of air when required. These points are

two side ones hung on joints, and having a lever screwed on the inside, to which a string is tied, and carried down behind a pulley to the side of the house, for the purpose of pulling them open. Every alternate light between the side studs is made to turn upon pivots for the purpose of giving air. The width of the house inside is sixteen feet, and the height eleven feet.

A, represents a drain laid along the centre, in case water in excess should find its way in, and on each side of the drain is a layer of brick-bats, rammed down to prevent the roots

of the trees reaching the subsoil. B, the border, from two to two and a-half feet deep, of good fresh soil, composed of half-rotted turves from a field. C, spline racks to walk upon. These should be made in convenient lengths, that they may be removed in case a tree requires lifting, etc. D, espalier peaches and nectarines on the south side, and figs and plums on the north side. E, standard peaches and nectarines.

By such an arrangement as this, all other things being equal, a great quantity of fruit would be produced in a small house. The amount of care and attention necessary would be far less than it would be to carry out in good style a house of pot trees, and the risk of spoiling the crop from occasional neglect, far

less as the trees are in a more natural position, and therefore I am induced to recommend its adoption. It must not be forgotten, however, that the border, being under cover, receives no moisture from the atmosphere, therefore abundant watering will be necessary, especially when the trees are swelling a crop of fruit. But then one good watering will suffice for several days, whereas a man that has a house of pot-trees must always be watching them. The same attention to airing, syringing, and setting the fruit blossom, pinching back shoots that are not required to form the tree, etc., will, however, be necessary, as well in the house where trees are planted out, as in that in which the trees are in pots.

*Whitwell.*

H. HOWLETT.

### MIXED FLOWER BORDERS.

THE following suggestions are extracted from the "Florist's Journal" of 1840, and they occur in a paper on Flower Gardens by Mr. R. Plant:—

A plot of ground solely devoted to the growth of flowers should be of such a size that it can be easily managed, so that each individual plant in it may have its proper modicum of attention and care; it being an acknowledged fact, that there is more pleasure in the possession of a few well-grown plants, than can be derived from a large yet badly grown collection.

It matters little what the shape of it is—a square or circular form is, perhaps, the best; but if the situation can be chosen, the southern side of a hill is best adapted to the growth of such plants as are usually found in flower-gardens. The laying out depends entirely on the taste of the person engaged in it; and nothing can be found in which good taste and sound judgment may be displayed to more advantage.

It should be so arranged that every part may harmonize with the whole. It is a question often argued, whether a flower-garden should be in unison with the surrounding scenery,

or not. We are in favour of the contrast; for what can be more pleasing than, amid a rugged landscape, to observe a small spot verdant and level, where nature seems to have collected her choicest gems; and, on the contrary, when surrounded by an open flat country, a diversified surface, scattered over with innumerable beauties, will arrest the attention of the most indifferent.

If grass or water can be introduced with proper effect, they are great ornaments; yet nothing can be worse than the appearance of little narrow edgings of grass, continually out of order, looking like a tuft here and there the gardener had neglected to remove. In such cases, an edging of box is by far the neatest; and though more expensive at first, it is more durable. The principal walks should be at least three feet in width, with a good substratum of stones or brick rubbish, and a gentle rise towards the centre of the surface, which will keep them dry, and prevent moss from growing on them.

We now come to the arrangement of the plants. Where sufficient space may be commanded, small beds, filled entirely with one kind of plant, form

an excellent method, inasmuch as the plants have usually more room, and are, consequently, better grown; having, for instance, a bed of dahlias at the back, one of roses before them, and in front, a bed of some pretty and free-flowering annual. Or they may be composed of two or more distinct varieties, or even genera, observing to choose such plants as require the same soil and treatment, and are of similar habits, yet of contrary colours. This, though more difficult, is perhaps the best, as it brings the different colours in closer contact, and affords a richer contrast. We subjoin a list of a few of the most appropriate plants for mixing, intending them merely as an illustration of what we have said, there being many other equally suitable for the purpose.

Where there is not room for so many beds as would be required to contain a sufficient number of plants to obtain the desired effect, they may be planted together; taking care to keep the tallest at the back, or centre, as the case may require, bringing them down by a gentle gradation, till you have the humble mignonne, the pretty nemophila, or sparkling ice-plant, at your feet.

*Angellia Phillipsii* (blue), with *A. grandiflora superba* (red), one foot.

*Campanula Lorei* (white) with blue var., one foot.

*Campanula Garganica* (white) with blue var., one foot six inches.

*Escholtzia crocea* (yellow) with *Nemophila atomaria* (blue), one foot.

*Clintonia pulchella* (blue) with *Schyzopetalon Walkeri* (white), two feet.

*Heliotropium corymbosum* (lilac) with *Gaillardia nana* (orange), two feet.

*Lobelia propinquens* (scarlet) with *L. azurea* (blue), three feet.

*Lobelia cardinalis* (red) with *Commelina coelestis* (blue), three feet.

*Nemophila insignis* (blue) with *N. atomaria*, var. *alba*, one foot.

*Plumbago capensis* (blue) with *Phlox Drummondii* (crimson), two feet.

*Sollya heterophylla* (blue) with *fuchsia*, in varieties, two feet.

*Verbenas*, in varieties.

In conclusion, we shall just remark that those plants usually denominated "florists' flowers," are better in beds by themselves, than when grouped with other plants, both with respect to management and general appearance.

## THE CULTURE OF OXALIS.

THE genus *Oxalis* is a very extensive one, and contains plants differing widely in their habits, and therefore when brought into cultivation requiring entirely different modes of treatment. For instance, the lovely *O. amœna* is a truncated bulb, increasing itself by thrusting its offsets from its sides, exactly parallel to itself, and forming altogether a fascicle of roots that are never altogether dormant. It is a greenhouse plant, beginning to push vigorously in the month of March, when it should be encouraged to grow by watering liberally, and placing in as light a position as possible; by the middle of May it will have made a quantity of both foliage and flowers, when it may be turned into a warm border, where it will

make quite a cushion of its exquisitely rosy satin-like flowers throughout the entire summer. About the middle of October pot it carefully in a conveniently sized pot, according to the size of the plant, using equal parts fibrous peat and turfy loam, and one-sixth silver-sand, and stow away for the winter in as light a position as possible, because it makes gentle growth throughout the entire winter. If it is desired to keep and flower in a pot instead of the open ground, encourage with a liberal shift early in May into the above-named compost. These remarks upon *O. amœna* will apply to all those members of the group of which it is a type.

*O. Bowiei* is a familiar type of another portion of the genus, as dif-

ferent in its habits as though it belonged to quite another family. This plant blooms in September, October, and November; after flowering, it will retain its foliage until March, April, and May, which it should be encouraged to develop to the utmost, by placing on the shelf of the greenhouse as near the glass as possible, as on this (as in the case of all other bulbous plants) depends success in flowering. When the leaves begin to turn yellow, withhold water by degrees until they are quite dead; then place the pots in some position where water cannot reach them, until the beginning of August, when shake out the roots, and repot them, placing five or six bulbs in a 48 pot, using good mellow loam and leaf-mould, equal parts of each; if leaf-mould cannot be obtained, very old rotten manure will do equally well; water moderately at first, place in the full sun, and they will immediately start into growth and flower. The season of rest, etc., must be regulated by the period of blooming in all those possessing the characters of *O. Bowiei*.

We come now to mention the pretty little *O. acetosella*, which is always green and growing, and throughout nearly the whole of the summer is covered with its pretty white flowers. This plant has a creeping, transparent, fleshy fascicle, which roots at every joint; and this, and every member of the genus having the same character and habits, should be potted in the lightest soil; moss and leaf-mould, mixed in equal parts, suit them perfectly.

The transparent stems, the lively green leaves, the bushy habit, and the graceful contour altogether of *O. corniculata* form quite another character in the genus *Oxalis*. This pretty plant, with all of allied habit, delights in a good fat soil, not too retentive, and in a position where partial shade can be afforded, as it is only in such a position that the delicate greenness of the foliage and transparency of the stems, together with the gamboge yellow of its flowers, are brought clearly out.

The following species and varieties of *Oxalis* are extremely beautiful and admirably adapted for cultivation, as valuable additions to the choicest collection of plants.

#### HARDY.

*Corniculata*, three inches high, a yellow annual; August.

*Dillonii florida*, two feet, yellow annual; July.

*Sensitiva*, three inches, yellow annual; July.

*Americana*, three inches, white bulb; April.

#### GREENHOUSE.

*Rosea*, five inches, rose, under greenhouse culture, blooms during a period of six months; as a hardy annual, from June to September; it is a perfect gem. Raised from seeds or cuttings; does not form a bulb.

*Acetosella*, six inches, white; May to September; bulbous.

*Bifida*, nine inches, violet; September; bulbous.

*Elongata amœna*, six inches, rose; July; bulbous.

*Floribunda*, eighteen inches, red; July; herbaceous.

*Bowiei*, six inches, crimson; October; a fine bulbous species.

*Deppoi*, three inches, red; March; a beautiful bulbous species.

*Caprina*, three inches, flesh; August; bulbous.

*Flava*, six inches, yellow; March; bulbous.

*Reptatrix*, three inches, flesh; November; bulbous.

*Rigidula*, six inches, white; September; bulbous.

*Speciosa*, three inches, purple; October; bulbous.

*Tetraphylla*, three inches, purple; June; bulbous.

*Versicolor*, three inches, crimson; February; a valuable species for winter flowers, bulbous.

*Variabilis grandiflora*, three inches, white; November; bulbous.

*Variabilis Simsii*, three inches, white; November; bulbous.

## GARDENING FOR CHILDREN.

We have often wondered that among the lady writers on gardening there has hitherto been no attempt made to direct the passion for gardening which is so frequently exhibited in children. We see the little things planting daisies to-day and taking them up to-morrow, making miniature fences of willow wands, using the hoops of a tub to make a bridge, and planting cherry-stones in expectation of immense crops of cherries next year. This love of gardening among children might assuredly be directed, and with the best promise of good results. The care of a bit of garden would develop their powers of observation and comparison, make the doing something a habit rather than a fitful act, and teach as a lesson for life, that our amusements may be utilized and our hours of pleasure made subservient to good. We know of none among the writers of the day so well qualified to explain the art of gardening to children, and to encourage the little gardeners in their hobby, as the well known "M. E. M.," the author of "Indoor Plants," "Cragstone Cottage," etc., etc. We have, therefore, much pleasure in introducing to our readers "Birds and Flowers,"\* a lively, gossiping treatise on the two subjects named in the title, not simply adapted to the capacity of children, but conceived in the spirit of a child's mind. The following is a sample of it:—

### MAKING AN ARBOUR.

"There are so many ways of making a rustic summer-house, or arbour, that I hardly know which to describe the first. Tall, green boughs, stuck in and bent together, make a nice gipsy tent for a birthday feast; and that is the first arbour that I can remember helping to construct. Tall willow sticks, bound over and covered with climbing plants, are again very pretty. Yew trees, trained out over

a rough wooden frame, make a perfect shelter from the heaviest shower, and a delightfully thick and close-growing wall of green. Living shrubs interlaced, make also roofs and walls; a few stout posts being ample for keeping them in their places. And, lastly, a rough trellis-work of sticks crossed and recrossed, and overgrown with flowers and with ivy, makes a perfect picture of a summer-bower.

"I like the latter plan so very much the best, that it is the one that I will now describe, for I think after making it the others will all come easy.

"The first thing, then, is to plant four or six stout corner posts, according to the most wished-for shape. Young larch trees do best, and they may keep their bark on.

"Now and then there happen to be four trees growing in proper places, such as we can use; then the only thing would be to cut the tops and branches off; but this, I think, seldom happens except in desert islands.

"Having got, then, four stout larch posts, about one-third taller than we wish to make our ceiling, the next thing we have to do will be to sharpen the points that they may go into the ground, and to dip the ends into pitch that they may not decay. These posts then have to be driven into the ground *very* firmly indeed, and we must always mind that the distances are equal, and that our walls stand straight. The next thing should be to get some more larch posts, split in two, and to nail them firmly, or left them into notches, from side-post to side-post.

"Supposing it to be a six-sided bower, and that you do not wish to have it rainproof, you will next fasten crossbars from one side post to the next but one, and so on, till all three are on; and then do the same again, taking the posts that you missed the first time. Long tough willow stems do the best for this; and having fastened, or tied a few with good strong tarred twine, like the sailors use on

\* "Birds and Flowers; or, the Children's guide to Gardening and Bird-Keeping." London, published by Emily Faithful, Great Cornam Street, W.C.

board ship, you may weave in the rest. Tarred cord, I must remind you, is not to be much used; it is useful in gardens, because a ring of it round a tree keeps hares and insects away; but in a flower garden it should never be used where it can brush against people, as it stains their clothes. If you want, however, to preserve your string, and keep your house in repair, you will paint over the cord you use with a little dark green paint, when it is used low down.

"The roof then has to be all wattled over. You can fancy easily how to work the willows, or "sallies," in and out, making a nice firm trellis. If you are really so ambitious as to wish the roof to be waterproof, you must make the framework very close indeed, and then you can lay on it a quantity of green moss, with the green side downwards; and then nail a piece of felt on, and cover that again with a fresh moss thatching, or even with one of straw. These roofs are very useful, but not half so pretty as a mere rustic shade; and if your garden is very near the house, I think it is a pity to spoil the look for such a doubtful pleasure. The roof requires, too, to be much higher on one side than on the other when you have it waterproof, and this sadly does away with the pretty Italian or Japanese square trellis.

"I think that flower gardens are mere summer pleasures, and in summer we want shade chiefly. In full view of the house, at any rate, you do not want a summer-house; so unless you are far away I am an advocate of the trellis plan, which is done so easily and always looks so nice.

"Having made your roof, you next may construct the walls, which is quite reversing all proper house building order. Nothing hardly is prettier than a crossed fence here again—a row of long sticks leaning one way, and another row going the other, on three of the sides of the six-sided bower. The interstices can be as large or as small as you like; or I have seen such bowers looking extremely pretty without any walls at all, and only surrounded by the six strong pillars. It

is an important question what to plant by these pillars.

"I think myself that each should have something evergreen, and then any extra flowers make it immensely gay. Many people like to have ivy, for when it grows well, nothing looks prettier, both in summer and winter; and there is also a delightful evergreen rose which does well in warm places; or you might have an evergreen shrub planted at each corner, besides many other things. Privet is very pretty, and makes a beautiful close green; I think it is quite a shame that it is so turned out of flower gardens, for unless myrtles grow well, as they do in the Isle of Wight, few plants are greener.

"A pretty box tree would do well here, too, or a little holly very well indeed, and then you would have at Christmas holly and ivy of your own peculiar growth. You ought to plant some evergreens if you mean to have a garden full of spring flowers in the early spring, which I would not miss for anything. Then there should be a vine or perhaps a Virginian-creeper, which grows very quickly and has red leaves in autumn, which hang on amidst the ivy for a long while sometimes.

"The ivy itself does not always grow very fast. People seem to fancy that it will grow anywhere, and does not want any care, which is a great mistake. If it were planted in plenty of good leaf-mould, like that which it would meet with under the trees in woods, and up against old walls, where heaps of leaves have laid till they have decayed, and if it were kept well watered, it would grow a great deal quicker, and cover all the framework in about half the time it takes when left alone. Have you ever noticed the pink China roses, growing amidst dark ivy and peeping out here and there? Even in the winter they will often look so pretty, and if any one should chance to have a tall holly tree, or an ivy-grown wall, by which they can plant a flower, I much advise them to put in a China rose, and some roots of great white convolvulus, of the kind called Calystegia.

"Sweet peas sown in-doors in

uary, and also Nasturtiums and *ariensis* sown in the ground in autumn, will make a great show in the first year, and *Cobea scandens*, being sown in-doors in pots, may be grown quite spreading in time to put out in May.

'Jessamines, too, and honeysuckle, grow beautifully; indeed, the prettiest that I have ever seen of these climbing bowers have been covered with ivy, with roses, and honeysuckles, perhaps a vine and clematis, or the jessamine.

"The vine should be cut back after each autumn, because then the young shoots in spring will be denser and closer.

"Of course, when the trellis is covered you will want some seats, and, I dare say, a table; that would be a charming plan to have, instead of a table only, a bark basket containing growing ferns. And the seat could be made of twisted branches, too, or some wicker chairs might be painted green or brown.

"The basket of ferns would thrive most charmingly in the shade, and I am sure you would delight, in each new place you went to, in collecting ferns to add to those growing in it.

"I may just add a hint that many little plants which grow on walls and in clefts of trees, would look pretty on the roof of your garden house."

### DECEMBER, 1862.—31 DAYS.

PHASES OF THE MOON.—Full, 6th, 7h. 38m. morn.; Last Quarter, 14th, 10h. 33m. morn.; New, 21st, 5h. 4m. morn.; First Quarter, 27th, 11h. 44m. even.

| Sun<br>ises. | Sun<br>sets. | Weather near London, 1861. |      |              |        |     |                          | Rain. | THE COUNTRY. |                                 |
|--------------|--------------|----------------------------|------|--------------|--------|-----|--------------------------|-------|--------------|---------------------------------|
|              |              | BAROMETER.                 |      | THERMOMETER. |        |     | Rural Sights and Sounds. |       |              |                                 |
|              |              | Mx.                        | Min. | Mx.          | Mn.    | Me. |                          |       |              |                                 |
| a.m.         | h.m.         |                            |      |              |        |     |                          |       |              |                                 |
| 7            | 45           | 3                          | 53   | 30.245       | 29.808 | 51  | 23                       | 37.0  | .00          | All deciduous trees leafless    |
| 7            | 46           | 3                          | 52   | 30.674       | 30.295 | 50  | 20                       | 35.0  | .00          | Common groundsel flowers        |
| 7            | 48           | 3                          | 51   | 30.214       | 30.105 | 53  | 16                       | 34.5  | .00          | Houseflies disappear            |
| 7            | 50           | 3                          | 51   | 30.114       | 29.821 | 52  | 23                       | 37.5  | .30          | Ivy berries ripen               |
| 7            | 51           | 3                          | 50   | 29.744       | 29.693 | 49  | 22                       | 35.5  | .00          | Thelotrema on holly bark        |
| 7            | 52           | 3                          | 50   | 29.671       | 29.271 | 51  | 40                       | 45.5  | .46          | Hollyberries ripen              |
| 7            | 53           | 3                          | 50   | 29.384       | 29.195 | 60  | 34                       | 47.0  | .00          | Dandelion flowers               |
| 7            | 55           | 3                          | 49   | 29.674       | 29.414 | 55  | 39                       | 47.0  | .23          | Shepherds' purse flowers        |
| 7            | 56           | 3                          | 49   | 29.832       | 29.788 | 59  | 36                       | 47.5  | .00          | Common chickweed flowers        |
| 7            | 57           | 3                          | 49   | 29.783       | 29.737 | 57  | 32                       | 44.5  | .01          | Skylarks congregate             |
| 7            | 58           | 3                          | 49   | 30.040       | 29.988 | 56  | 37                       | 46.5  | .06          | Polyanthus flowers              |
| 7            | 59           | 3                          | 49   | 29.876       | 29.659 | 54  | 44                       | 49.0  | .04          | Wild ducks on inland marshes    |
| 8            | 0            | 3                          | 49   | 29.460       | 29.384 | 54  | 34                       | 44.0  | .06          | Greenfinches congregate         |
| 8            | 1            | 3                          | 49   | 30.029       | 29.885 | 53  | 39                       | 46.0  | .00          | Mistletoe berries ripen [places |
| 8            | 2            | 3                          | 49   | 30.147       | 30.119 | 53  | 40                       | 46.5  | .07          | Furze flowers in sheltered      |
| 8            | 3            | 3                          | 49   | 30.190       | 30.124 | 51  | 40                       | 45.5  | .00          | Colt's-foot flowers [weather    |
| 8            | 3            | 3                          | 49   | 30.167       | 30.012 | 49  | 35                       | 42.0  | .00          | Hepatica flowers in mild        |
| 8            | 4            | 3                          | 50   | 29.944       | 29.899 | 46  | 36                       | 41.0  | .00          | Primroses flower in sheltered   |
| 8            | 5            | 3                          | 50   | 30.222       | 30.177 | 45  | 30                       | 37.5  | .00          | Chaffinches flock [places       |
| 8            | 5            | 3                          | 50   | 30.376       | 30.303 | 42  | 35                       | 38.5  | .00          | Marsh titmouse sings            |
| 8            | 6            | 3                          | 51   | 30.380       | 30.233 | 41  | 37                       | 39.0  | .00          | Glaucous Riccia on rocks        |
| 8            | 6            | 3                          | 51   | 30.205       | 30.194 | 45  | 36                       | 40.5  | .00          | Moles throw up hillocks         |
| 8            | 7            | 3                          | 52   | 30.270       | 30.250 | 45  | 33                       | 39.0  | .00          | Colymbetes fuliginosus          |
| 8            | 7            | 3                          | 52   | 30.286       | 30.176 | 45  | 30                       | 37.5  | .00          | Drab-day moth                   |
| 8            | 8            | 3                          | 53   | 30.169       | 30.092 | 46  | 18                       | 32.0  | .00          | Lepralia abundant at seaside    |
| 8            | 8            | 3                          | 54   | 30.300       | 30.200 | 35  | 20                       | 27.5  | .00          | Tremella on dead wood           |
| 8            | 8            | 3                          | 55   | 30.499       | 30.433 | 40  | 25                       | 32.5  | .00          | Nidularia on dung-heaps         |
| 8            | 8            | 3                          | 55   | 30.454       | 30.409 | 39  | 30                       | 34.5  | .00          | Carabus morbillosus             |
| 8            | 8            | 3                          | 56   | 30.414       | 30.327 | 31  | 22                       | 26.5  | .00          | Graphis stricta on bark         |
| 8            | 8            | 3                          | 57   | 30.380       | 30.336 | 36  | 24                       | 30.0  | .01          | Yellow hue Quaker moth          |
| 8            | 9            | 3                          | 58   | 30.368       | 30.239 | 39  | 29                       | 34.0  | .00          | Decem!                          |

board ship, you may weave in the rest. Tarred cord, I must remind you, is not to be much used; it is useful in gardens, because a ring of it round a tree keeps hares and insects away; but in a flower garden it should never be used where it can brush against people, as it stains their clothes. If you want, however, to preserve your string, and keep your house in repair, you will paint over the cord you use with a little dark green paint, when it is used low down.

"The roof then has to be all wattled over. You can fancy easily how to work the willows, or "sallies," in and out, making a nice firm trellis. If you are really so ambitious as to wish the roof to be waterproof, you must make the framework very close indeed, and then you can lay on it a quantity of green moss, with the green side downwards; and then nail a piece of felt on, and cover that again with a fresh moss thatching, or even with one of straw. These roofs are very useful, but not half so pretty as a mere rustic shade; and if your garden is very near the house, I think it is a pity to spoil the look for such a doubtful pleasure. The roof requires, too, to be much higher on one side than on the other when you have it waterproof, and this sadly does away with the pretty Italian or Japanese square trellis.

"I think that flower gardens are mere summer pleasures, and in summer we want shade chiefly. In full view of the house, at any rate, you do not want a summer-house; so unless you are far away I am an advocate of the trellis plan, which is done so easily and always looks so nice.

"Having made your roof, you next may construct the walls, which is quite reversing all proper house building order. Nothing hardly is prettier than a crossed fence here again—a row of long sticks leaning one way, and another row going the other, on three of the sides of the six-sided bower. The interstices can be as large or as small as you like; or I have seen such bowers looking extremely pretty without any walls at all, and only surrounded by the six strong pillars. It

is an important question what to plant by these pillars.

"I think myself that each should have something evergreen, and then any extra flowers make it immensely gay. Many people like to have ivy, for when it grows well, nothing looks prettier, both in summer and winter; and there is also a delightful evergreen rose which does well in warm places; or you might have an evergreen shrub planted at each corner, besides many other things. Privet is very pretty, and makes a beautiful close green; I think it is quite a shame that it is so turned out of flower gardens, for unless myrtles grow well, as they do in the Isle of Wight, few plants are greener.

"A pretty box tree would do well here, too, or a little holly very well indeed, and then you would have at Christmas holly and ivy of your own peculiar growth. You ought to plant some evergreens if you mean to have a garden full of spring flowers in the early spring, which I would not miss for anything. Then there should be a vine or perhaps a Virginian-creeper, which grows very quickly and has red leaves in autumn, which hang on amidst the ivy for a long while sometimes.

"The ivy itself does not always grow very fast. People seem to fancy that it will grow anywhere, and does not want any care, which is a great mistake. If it were planted in plenty of good leaf-mould, like that which it would meet with under the trees in woods, and up against old walls, where heaps of leaves have laid till they have decayed, and if it were kept well watered, it would grow a great deal quicker, and cover all the framework in about half the time it takes when left alone. Have you ever noticed the pink China roses, growing amidst dark ivy and peeping out here and there? Even in the winter they will often look so pretty, and if any one should chance to have a tall holly tree, or an ivy-grown wall, by which they can plant a flower, I much advise them to put in a China rose, and some roots of great white convolvulus, of the kind called Calystegia.

"Sweet peas sown in-doors in



nuary, and also Nasturtiums and nariensis sown in the ground in tumn, will make a great show in first year, and Cobea scandens, o being sown in-doors in pots, may grown quite spreading in time to nt out in May.

"Jesamines, too, and honeysuckle beautifully; indeed, the prettiest ite that I have ever seen of these illised bowers have been covered thivy, with roses, and honeysuckles, d perhaps a vine and clematis, or ite jessamine.

"The vine should be cut back a ble in each autumn, because then e young shoots in spring will be ener and closer.

"Of course, when the trellis is covered you will want some seats, and, I dare say, a table; that would be a charming plan to have, instead of a table only, a bark basket containing growing ferns. And the seat could be made of twisted branches, too, or some wicker chairs might be painted green or brown.

"The basket of ferns would thrive most charmingly in the shade, and I am sure you would delight, in each new place you went to, in collecting ferns to add to those growing in it.

"I may just add a hint that many little plants which grow on walls and in clefts of trees, would look pretty on the roof of your garden house."

### DECEMBER, 1862.—31 DAYS.

PHASES OF THE MOON.—Full, 6th, 7h. 38m. morn.; Last Quarter, 14th, 10h. 33m. morn.; New, 21st, 5h. 4m. morn.; First Quarter, 27th, 11h. 44m. even.

| Sun rises. | Sun sets. | Weather near London, 1861. |        |              |     |      |                          | Rain.                           | THE COUNTRY. |
|------------|-----------|----------------------------|--------|--------------|-----|------|--------------------------|---------------------------------|--------------|
|            |           | BAROMETER.                 |        | THERMOMETER. |     |      | Rural Sights and Sounds. |                                 |              |
|            |           | Mx.                        | Min.   | Mx.          | Mn. | Me.  |                          |                                 |              |
| h. m.      | h. m.     |                            |        |              |     |      |                          |                                 |              |
| 7 45       | 3 53      | 30.245                     | 29.808 | 51           | 23  | 37.0 | .00                      | All deciduous trees leafless    |              |
| 7 46       | 3 52      | 30.674                     | 30.295 | 50           | 20  | 35.0 | .00                      | Common groundsel flowers        |              |
| 7 48       | 3 51      | 30.214                     | 30.105 | 53           | 16  | 34.5 | .00                      | Houseflies disappear            |              |
| 7 50       | 3 51      | 30.114                     | 29.821 | 52           | 23  | 37.5 | .30                      | Ivy berries ripen               |              |
| 7 51       | 3 50      | 29.744                     | 29.693 | 49           | 22  | 35.5 | .00                      | Thelotrema on holly bark        |              |
| 7 52       | 3 50      | 29.671                     | 29.271 | 51           | 40  | 45.5 | .46                      | Hollyberries ripen              |              |
| 7 53       | 3 50      | 29.384                     | 29.195 | 60           | 34  | 47.0 | .00                      | Dandelion flowers               |              |
| 7 55       | 3 49      | 29.674                     | 29.414 | 55           | 39  | 47.0 | .23                      | Shepherds' purse flowers        |              |
| 7 56       | 3 49      | 29.832                     | 29.788 | 59           | 36  | 47.5 | .00                      | Common chickweed flowers        |              |
| 7 57       | 3 49      | 29.783                     | 29.737 | 57           | 32  | 44.5 | .01                      | Skylarks congregate             |              |
| 7 58       | 3 49      | 30.040                     | 29.988 | 56           | 37  | 46.5 | .06                      | Polyanthus flowers              |              |
| 7 59       | 3 49      | 29.876                     | 29.659 | 54           | 44  | 49.0 | .04                      | Wild ducks on inland marshes    |              |
| 8 0        | 3 49      | 29.460                     | 29.384 | 54           | 34  | 44.0 | .06                      | Greenfinches congregate         |              |
| 8 1        | 3 49      | 30.029                     | 29.885 | 53           | 39  | 46.0 | .00                      | Mistletoe berries ripen [places |              |
| 8 2        | 3 49      | 30.147                     | 30.119 | 53           | 40  | 46.5 | .07                      | Furze flowers in sheltered      |              |
| 8 3        | 3 49      | 30.190                     | 30.124 | 51           | 40  | 45.5 | .00                      | Colt's-foot flowers [weather    |              |
| 8 3        | 3 49      | 30.167                     | 30.012 | 49           | 35  | 42.0 | .00                      | Hepatica flowers in mild        |              |
| 8 4        | 3 50      | 29.944                     | 29.899 | 46           | 36  | 41.0 | .00                      | Primroses flower in sheltered   |              |
| 8 5        | 3 50      | 30.222                     | 30.177 | 45           | 30  | 37.5 | .00                      | Chaffinches flock [places       |              |
| 8 5        | 3 50      | 30.376                     | 30.303 | 42           | 35  | 38.5 | .00                      | Marsh titmouse sings            |              |
| 8 6        | 3 51      | 30.380                     | 30.233 | 41           | 37  | 39.0 | .00                      | Glaucous Riccia on rocks        |              |
| 8 6        | 3 51      | 30.205                     | 30.194 | 45           | 36  | 40.5 | .00                      | Moles throw up hillocks         |              |
| 8 7        | 3 52      | 30.270                     | 30.250 | 45           | 33  | 39.0 | .00                      | Colymbetes fuliginosus          |              |
| 8 7        | 3 52      | 30.286                     | 30.176 | 45           | 30  | 37.5 | .00                      | Drab-day moth                   |              |
| 8 8        | 3 53      | 30.169                     | 30.092 | 46           | 18  | 32.0 | .00                      | Leprelia abundant at seaside    |              |
| 8 8        | 3 54      | 30.300                     | 30.200 | 35           | 20  | 27.5 | .00                      | Tremella on dead wood           |              |
| 8 8        | 3 55      | 30.499                     | 30.433 | 40           | 25  | 32.5 | .00                      | Nidularia on dung-heaps         |              |
| 8 8        | 3 55      | 30.454                     | 30.409 | 39           | 30  | 34.5 | .00                      | Carabus morbillosus             |              |
| 8 8        | 3 56      | 30.414                     | 30.327 | 31           | 22  | 26.5 | .00                      | Graphis stricta on bark         |              |
| 8 8        | 3 57      | 30.380                     | 30.336 | 36           | 24  | 30.0 | .01                      | Yellow hue Quaker moth          |              |
| 8 9        | 3 58      | 30.368                     | 30.239 | 39           | 29  | 34.0 | .00                      | December moth                   |              |

## NOTES FOR THE GARDEN.

**KITCHEN GARDEN.**—Make plantations of rhubarb, seakale, asparagus, and horse-radish. Roots of dandelion, packed together in leaf-mould, and put into gentle heat, will furnish a delicate salad in five or six weeks. Paskall's seakale pots are best for the purpose. Keep dung and all soluble matters under cover. Turn over manures, and put aside in heaps to be frozen, rotted leaves, and other materials suitable for potting, and when well sweetened and pulverized, remove to bins in the potting-shed to keep dry for use. Get sticks and stakes tied up in bundles ready for use; wheel turf and weeds to the muck-pit; get pots washed and sorted over, and crocks sifted into sizes for the potting-bench.

**FRUIT GARDEN.**—Let nothing lie in by the heels an hour longer than can be helped. Bush fruits properly taken up and properly planted ought not to miss the move in the slightest degree, but you are sure to lose a whole season if they lie about waiting to be planted. Root-prune any trees that grow too luxuriantly to bear well. Lay boards in a slope over vine borders, to shelter them from excessive cold-rains. Unnail from the walls the

younger shoots of tender wall-trees, to prevent premature breaking. Strawberry-beds may be made this month, but there is no certainty of a crop if left so late.

**FLOWER GARDEN.**—Keep everything as tidy as possible. If any bulbs remain out of the ground, get them in without delay. Take up tea-roses, and lay in by the heels in a shed, out of reach of frost. Cut down fuchsias that are to remain out all the winter, and cover their roots with coal ashes. Pansies, pinks, and other choice things in open beds, should have a little light litter sprinkled over them in frosty weather, or be protected with canvas on hoops; tulips protect in the same way. Keep auriculas and other plants in frames moderately dry, and free of dead leaves.

**GREENHOUSE AND STOVE.**—Vines that are forward will want frequent attention and a very regular heat. Ericas must have air at every opportunity, and if brought in with flowering shrubs to be forced, must be very gently stimulated, as they are impatient of heat. Soft-wooded plants must have fire-heat during foggy weather as well as during frost. Greenhouse, 40° to 45°. Vines started 60° by day.

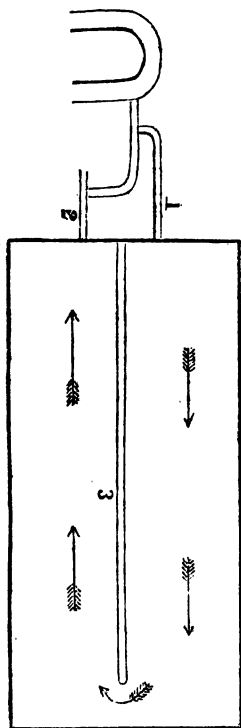
---

## TO CORRESPONDENTS.

**PIT FOR PROPAGATING AND THE GROWTH OF MELONS.**—I have a cold brick-pit ten feet long, by five feet wide, and rising three feet six inches at the back, which I want to heat with bottom heat, so as to be able to propagate bedding plants in spring, and to grow cucumbers or melons in afterwards. Will you kindly assist me, by informing me, how I can accomplish this in the *cheapest* manner by means of a brick or tile pipe flue, and how the stove or fireplace should be placed in one end so as to secure sufficient draught for the flue. The pit, being inside, rather below the level of the ground, I suppose the fireplace must be sunk in the ground outside, low enough to admit of a slight rise to the flue? or would it be better to build the pit a little higher, so as to admit of the flue being placed level with the ground outside? Would you tell me also what sort of stove or fireplace is the *most economical in fuel*, and had I better have

it built *into* one end of the pit or not? I thought of having a small brick Arnot stove built into one end, but I see Mr. Rivers, in "The Orchard House," states that these stoves will not do with a horizontal flue of a greater length than *three feet*.—*Amateur B.* [We apprehend that the kind of heat generated by the plan you propose, of carrying a flue through your pit, would not be congenial either for the growth of cucumbers, or the propagation of bedding-plants. It would be a dry and irregular heat instead of a moist and constant one. If, instead of constructing a flue, you make a hot-water tank of the whole area of the inside of the pit, so as to contain six inches in depth of water, and attach a small boiler to be fixed outside, a constant and genial warmth would be obtained at a small expense of time and fuel. Raise both the back and front walls of your pit twelve or fifteen inches then procure some flagstones, or as it is

commonly called, Yorkshire paving, large enough to reach across the pit, or if more convenient, the breadth may be spanned by two pieces, the middle edges resting on a course or two of bricks as the case may be. Let this stone pavement be laid exactly level, two feet nine inches from the top of the brick part of the pit, then lay two courses of bricks all round the outside of the pavement in cement; on the top of these two courses, lay one brick on edge embedded firmly in cement; this will leave a small ledge



1, Flow; 2, Return; 3, Brick division.

on which to rest some slates, on which to lay the mould, etc. Also make a division in the centre, with two courses of bricks in cement, leaving a small space at the end farthest from the boiler, so that the water may circulate. After this is done cover the whole with slates, two slates will reach across, one edge resting on the ledge of the outer wall, and the other resting halfway over the middle wall; secure each end with cement, and

also let some stiff cement be applied to the joints to render them impervious to the steam, which will sodden the roots of the plants or cuttings, if allowed to escape through into the soil. This arrangement will give two feet of clear space for mould and plants at the back of the pit, and thirteen inches in front; an average foot of soil all over the bed, making it a little deeper at the back and somewhat shallower in the front, will be found to be ample for anything that may be grown in the pit. The flow and return pipes from the boiler must be inserted into the tank in the first course of brick, half an inch from the stone, so that the settleings of the water may not penetrate into the boiler. The advantage of raising the pit will be, that it will not be necessary to make the stoke-hole so deep. This arrangement will cost very little, if any, more than a brick flue, and will be entirely satisfactory.]

**ERYTHRINA CRISTA GALLI. — E. A. W. —**

This is very readily propagated by taking off the young shoots from the crown when they are three or four inches in length, and striking them in sand in heat under a bell-glass. Or, when the plant has flowered, cut the shoot into lengths, with an eye and a leaf attached to each piece, insert in sand in heat as before, and they will strike as readily as the eyes of a vine or a rose.

**GREENHOUSE CONSTRUCTION. — C. E. H. —**

The flue will heat your house much more efficiently than a stove, and the flue will be better carried all round as at A in the plan. By carrying it round as at B, a large space will be both awkward to get at and difficult to occupy profitably. Either carry the centre of the house six inches higher, or reduce the framework to three feet six inches, so as to give a sharper pitch to the roof; by this plan you will have less drip, and a larger amount of benefit from the winter's sun. The brick-work need not be more than four inches; you cannot have your fireplace and chimney in a better position, try to secure a small rise in the flue from beginning to end, no matter how little, so as it is a rise. Two-inch deal will be strong enough for the lights, but you must use quartering for the door-posts, uprights, rafters, and plates. As to the question of removal, to be quite safe, you had better lay some timber on the surface of your ground, and put the entire structure upon it; there will be no quibble or

Even so, you tell me

of any evergreen creeper which would grow without nailing on a house cased with Portland cement. A friend has been obliged to case a house of gray stone with Portland, on account of the porousness of the original material. Ivy grew luxuriantly on the stone, but it will not cling to the cement, and my object in writing this, is to inquire if the house can now be planted with some substitute.—Yours, *Ivy Green*. [We print this letter in hope of getting a hint from some of our readers as to what had best be done to cover this Portland casing. We know of no evergreen that will train itself as ivy does under the circumstances named. Virginian creeper will cling to anything, and would make a grand show all summer and autumn on those walls, but it is not evergreen. We regret we cannot offer one word of advice.]

**BED OF LILY OF THE VALLEY.**—*Lavender Hill* has a bed of lily of the valley, which are unsightly when out of bloom, and the question asked about them is whether the leaves may be cut off or whether the bed can be sown with flower-seeds to make a show all the summer. It would be very bad advice if we were to say cut the leaves off, because that would jeopardize the next season's bloom. So we must not counsel the sowing of seeds amongst them, because they want all the light and air they can get to perfect their flower-buds for next year. Still, if we had such a bed under the drawing-room windows—a very bad place for it—we would risk a little. We would, as soon as the bloom was over, strew amongst the plants some old powdery dung, to make a thin top-dressing of the soil amongst them, and then sow mignonettes very thinly. By the time that got of any size the lilies would be finishing their seasonal growth, and we should have the odour of the mignonette to compensate for the shabby appearance of the bed. But we must again say there would be a little risk about it, and we cannot advise such a way of using lily of the valley.

**BARREN CHERRY-TREE.**—*E. A. W.* has in her garden against the wall a fine healthy Bigarreau cherry-tree; it has been there six or seven years; it blooms freely, but has never set a cherry. *E. A. W.* would be glad to know what may be the cause of this. The gardener talks of digging about it, and cutting off the tap root; will that be a good course to pursue? Are there any cherry-trees that are only male and only female? [The gardener's proposal is a very good one; a better

plan will be to take the tree entirely out of the ground, prune all the roots to about fifteen or eighteen inches in length, and replant, using sandy loam to close the roots in with. Sterility in fruit-trees is very often occasioned by their being planted too deep, so that the graft is covered. If that has been the case with yours, take care in replanting that the roots are only just covered. Never heard of any member of the genus *Cerasus* producing flowers of but one sex.]

**TREATMENT OF COLEUS AND ZICHYA.**—In consequence of your mention of *Coleus Verschaffelti*, I purchased some plants, and struck numerous cuttings, but am sorry to find that since the cold weather began, a few weeks since, they are losing their leaves, both old and young, and seem dying. I thought that a summer bedding plant would stand a cool greenhouse. Will they live? I found the same difficulty with *Mandevilla* as your correspondent *A. B. S.*, and shall remove it. Will *Zichya Pannosa*, of which I raised several seedlings in the spring of 1861, and which seemed to struggle through last winter, flourish if trained next the glass. I only use fire during frost, and the temperature is sometimes down to 40°. [Your *Coleus* must have the warmth of a stove to preserve it in health through the winter; like many other things that will flourish in the open air in our summers, it cannot be kept alive even in a common greenhouse temperature. The *Zichya* will do well in any very light, airy situation, where it will not get frozen, provided it is potted in good sandy fibrous peat and loam, equal parts, well drained. It may also be planted out, and will run like a *Kennedya*, and flower beautifully in May.]

**FAILURE OF WALL-TREES.**—Having a garden wall under my care, with the border planted with peach and nectarines, I wish to ask your opinion and advice under the following circumstances:—The wall was built about twenty-six years ago; the border is all made soil, on a chalk bottom; the trees were planted, and produced beautiful crops of fruit for about twelve or fourteen years, when they began to fail, when, six years ago, I planted some young ones between them to take their place, having first removed and put in fresh soil, hoping for the same success, but was doomed to disappointment, as, after the first year, they began to fail, and in three years from the time of planting were entirely dead. Thinking insects had something to do

with it, my employer had the walls pointed and coloured; we then planted another batch of trees, but all to no purpose, as they show the same symptoms of death, which are an unnatural darkness at the buds; and in early spring you find three parts dead, and the tree becomes worthless. I conclude now, from close examination, that the wall is damp, as after autumnal rains they remain wet so long after the rain has fallen; but the trees used to do so well on the wall, which is built with clamp bricks, and has no coping.—*George Butler*, gardener to the Rev. F. Grantham, Bramber Rectory, Steyning, Sussex. [Your trees are suffering from stagnant moisture in the soil; make a drain at the distance of six feet from the wall, two feet in depth, lay a row of drain-pipes or tiles at the bottom, over them nine or twelve inches of brickbats or other coarse rubble; make sure of an outlet for any water that may accumulate in the drain. Then begin at one end of the border, take up all the trees carefully without exception, cut off all diseased and rotten roots, and lay the trees in some safe place while the border undergoes renovation. When the trees are all up, lay an inch or two of good stiff loam all over the border, from the wall to the drain; then begin at one end and turn over the soil fifteen inches deep, incorporating the new and old soil well together, and lay it in three sharp ridges, so that as much surface as possible may be exposed to the action of the atmosphere; let it lay a fortnight in this position, when give the whole another turn over, still preserving the ridge fashion. After having laid another fortnight, if the weather is open and genial, the border may be levelled down, and the trees again inserted in their proper places, taking care in replanting that the roots are only just covered. If, on examination, the success of any of the trees is doubtful, throw them away, and procure good healthy plants from the nursery. If the above plan is carried out, the trees will not in future suffer from excessive moisture.]

**MUSGRAVE'S SLOW COMBUSTION STOVE.**—*Mrs. L. P., and other correspondents.*—

precisely as we first described this stove in heating one of our houses (a lean-to thirty feet by ten feet), so it remains and is doing its duty as well as ever; and though in the early trials of it with great lengths of pipe, it was roughly used, it has not been cleaned or in any way altered. It is fitted with an

upright flue, formed of three lengths of four-inch glazed drain-pipe, with an iron mushroom cap to keep out rain and gusts of wind. It has kept heliotropes, geraniums, petanias, the artillery plant, justicias, and other equally tender plants, besides the ordinary run of bedding stock, and is a valuable contrivance for use in houses not furnished with flues or hot water pipes. It is open to the objection common to all stoves in greenhouses, and that is, that there is of necessity some amount of dust. We have always said that stoves in greenhouses are objectionable, and this is as true of the Arnott brick stove, as of Musgrave's slow combustion stove; but once admit a stove of any kind, and there is nothing to equal Musgrave's. To make sure of success, care must be taken to place the stove so as to promote a quick draught. It is a *slow combustion* stove, and therefore does not gallop away with the fuel; and once in action, continues to burn slowly for many hours. But this very character requires that there must be no trifling; a tortuous and lengthy flue will cause it to smoke, and a metal pipe exposed to the air will cool so quickly on a frosty night as to put the fire out. Place the stove so that there will be a regular flow of cold air along the floor of the house to it, and a direct outlet above for the products of combustion. If a brick or tile drain can be carried along the floor to it, all the better; but by placing four bricks or blocks of stone under the four corners of the stove, this slight elevation will suffice. *L. P.* wishes to use it to heat a hall or staircase; for this it will do admirably, if placed on a slab of stone in the hall, and fitted with a drain-pipe or brick flue passing direct into a chimney always in use, or direct upwards into the open air, as far as possible removed from the walls of the building. The drain-pipes may be cased in wood-work if their appearance is objectionable, as the flue is never more than moderately warm, the stove so completely sucks the heat out of the flue. Lastly, all beginners with this stove are advised to light a few shavings or pieces of paper in it before lighting the fire properly, so as to warm the flue and establish a draught. This may not be necessary when it gets fairly to work, but is advisable at the first start.

**BOOKS RECEIVED.**—"The Garden Oracle," for 1863, is, we hope, a good shilling's worth of horticultural information. It has increased in sale every year from

of the trees reaching the subsoil. B, the border, from two to two and a-half feet deep, of good fresh soil, composed of half-rotted turves from a field. C, spline racks to walk upon. These should be made in convenient lengths, that they may be removed in case a tree requires lifting, etc. D, espalier peaches and nectarines on the south side, and figs and plums on the north side. E, standard peaches and nectarines.

By such an arrangement as this, all other things being equal, a great quantity of fruit would be produced in a small house. The amount of care and attention necessary would be far less than it would be to carry out in good style a house of pot trees, and the risk of spoiling the crop from occasional neglect, far

less as the trees are in a more natural position, and therefore I am induced to recommend its adoption. It must not be forgotten, however, that the border, being under cover, receives no moisture from the atmosphere, therefore abundant watering will be necessary, especially when the trees are swelling a crop of fruit. But then one good watering will suffice for several days, whereas a man that has a house of pot-trees must always be watching them. The same attention to airing, syringing, and setting the fruit blossom, pinching back shoots that are not required to form the tree, etc., will, however, be necessary, as well in the house where trees are planted out, as in that in which the trees are in pots.

*Whitwell.*

H. HOWLETT.

### MIXED FLOWER BORDERS.

THE following suggestions are extracted from the "Florist's Journal" of 1840, and they occur in a paper on Flower Gardens by Mr. R. Plant:—

A plot of ground solely devoted to the growth of flowers should be of such a size that it can be easily managed, so that each individual plant in it may have its proper modicum of attention and care; it being an acknowledged fact, that there is more pleasure in the possession of a few well-grown plants, than can be derived from a large yet badly grown collection.

It matters little what the shape of it is—a square or circular form is, perhaps, the best; but if the situation can be chosen, the southern side of a hill is best adapted to the growth of such plants as are usually found in flower-gardens. The laying out depends entirely on the taste of the person engaged in it; and nothing can be found in which good taste and sound judgment may be displayed to more advantage.

It should be so arranged that every part may harmonize with the whole. It is a question often argued, whether a flower-garden should be in unison with the surrounding scenery,

or not. We are in favour of the contrast; for what can be more pleasing than, amid a rugged landscape, to observe a small spot verdant and level, where nature seems to have collected her choicest gems; and, on the contrary, when surrounded by an open flat country, a diversified surface, scattered over with innumerable beauties, will arrest the attention of the most indifferent.

If grass or water can be introduced with proper effect, they are great ornaments; yet nothing can be worse than the appearance of little narrow edgings of grass, continually out of order, looking like a tuft here and there the gardener had neglected to remove. In such cases, an edging of box is by far the neatest; and though more expensive at first, it is more durable. The principal walks should be at least three feet in width, with a good substratum of stones or brick rubbish, and a gentle rise towards the centre of the surface, which will keep them dry, and prevent moss from growing on them.

We now come to the arrangement of the plants. Where sufficient space may be commanded, small beds, filled entirely with one kind of plant, form

a excellent method, inasmuch as the plants have usually more room, and are, consequently, better grown; saving, for instance, a bed of dahlias at the back, one of roses before them, and in front, a bed of some pretty and free-flowering annual. Or they may be composed of two or more distinct varieties, or even genera, observing to choose such plants as require the same soil and treatment, and are of similar habits, yet of contrary colours. This, though more difficult, is perhaps the best, as it brings the different colours in closer contact, and affords a richer contrast. We subjoin a list of a few of the most appropriate plants for mixing, intending them merely as an illustration of what we have said, there being many other equally suitable for the purpose.

Where there is not room for so many beds as would be required to contain a sufficient number of plants to obtain the desired effect, they may be planted together; taking care to keep the tallest at the back, or centre, as the case may require, bringing them down by a gentle gradation, till you have the humble mignonette, the pretty nemophila, or sparkling ice-plant, at your feet.

*Angellia Phillipsii* (blue), with *A. grandiflora superba* (red), one foot.

*Campanula Lorei* (white) with blue var., one foot.

*Campanula Garganica* (white) with blue var., one foot six inches.

*Escholtzia crocea* (yellow) with *Nemophila atomaria* (blue), one foot.

*Clintonia pulchella* (blue) with *Schyzopetalon Walkeri* (white), two feet.

*Heliotropium corymbosum* (lilac) with *Gaillardia nana* (orange), two feet.

*Lobelia propinquens* (scarlet) with *L. azurea* (blue), three feet.

*Lobelia cardinalis* (red) with *Comelina cœlestis* (blue) three feet.

*Nemophila insignis* (blue) with *N. atomaria*, var. *alba*, one foot.

*Plumbago capensis* (blue) with *Phlox Drummondii* (crimson), two feet.

*Sollya heterophylla* (blue) with *fuchsia*, in varieties, two feet.

*Verbenas*, in varieties.

In conclusion, we shall just remark that those plants usually denominated "florists' flowers," are better in beds by themselves, than when grouped with other plants, both with respect to management and general appearance.

## THE CULTURE OF OXALIS.

THE genus *Oxalis* is a very extensive one, and contains plants differing widely in their habits, and therefore when brought into cultivation requiring entirely different modes of treatment. For instance, the lovely *O. amœna* is a truncated bulb, increasing itself by thrusting its offsets from its sides, exactly parallel to itself, and forming altogether a fascicle of roots that are never altogether dormant. It is a greenhouse plant, beginning to push vigorously in the month of March, when it should be encouraged to grow by watering liberally, and placing in as light a position as possible; by the middle of May it will have made a quantity of both foliage and flowers, when it may be turned into a warm border, where it will

make quite a cushion of its exquisitely rosy satin-like flowers throughout the entire summer. About the middle of October pot it carefully in a conveniently sized pot, according to the size of the plant, using equal parts fibrous peat and turfy loam, and one-sixth silver-sand, and stow away for the winter in as light a position as possible, because it makes gentle growth throughout the entire winter. If it is desired to keep and flower in a pot instead of the open ground, encourage with a liberal shift early in May into the above-named compost. These remarks upon *O. amœna* will apply to all those members of the group of which it is a type.

*O. Bowiei* is a familiar type of another portion of the genus, as dif-

ferent in its habits as though it belonged to quite another family. This plant blooms in September, October, and November; after flowering, it will retain its foliage until March, April, and May, which it should be encouraged to develop to the utmost, by placing on the shelf of the greenhouse as near the glass as possible, as on this (as in the case of all other bulbous plants) depends success in flowering. When the leaves begin to turn yellow, withhold water by degrees until they are quite dead; then place the pots in some position where water cannot reach them, until the beginning of August, when shake out the roots, and repot them, placing five or six bulbs in a 48 pot, using good mellow loam and leaf-mould, equal parts of each; if leaf-mould cannot be obtained, very old rotten manure will do equally well; water moderately at first, place in the full sun, and they will immediately start into growth and flower. The season of rest, etc., must be regulated by the period of blooming in all those possessing the characters of *O. Bowiei*.

We come now to mention the pretty little *O. acetosella*, which is always green and growing, and throughout nearly the whole of the summer is covered with its pretty white flowers. This plant has a creeping, transparent, fleshy fascicle, which roots at every joint; and this, and every member of the genus having the same character and habits, should be potted in the lightest soil; moss and leaf-mould, mixed in equal parts, suit them perfectly.

The transparent stems, the lively green leaves, the bushy habit, and the graceful contour altogether of *O. corniculata* form quite another character in the genus *Oxalis*. This pretty plant, with all of allied habit, delights in a good fat soil, not too retentive, and in a position where partial shade can be afforded, as it is only in such a position that the delicate greenness of the foliage and transparency of the stems, together with the gamboge yellow of its flowers, are brought clearly out.

The following species and varieties of *Oxalis* are extremely beautiful and admirably adapted for cultivation, as valuable additions to the choicest collection of plants.

#### HARDY.

*Corniculata*, three inches high, a yellow annual; August.

*Dillonii florida*, two feet, yellow annual; July.

*Sensitiva*, three inches, yellow annual; July.

*Americana*, three inches, white bulb; April.

#### GREENHOUSE.

*Rosea*, five inches, rose, under greenhouse culture, blooms during a period of six months; as a hardy annual, from June to September; it is a perfect gem. Raised from seeds or cuttings; does not form a bulb.

*Acetosella*, six inches, white; May to September; bulbous.

*Bifida*, nine inches, violet; September; bulbous.

*Elongata amena*, six inches, rose; July; bulbous.

*Floribunda*, eighteen inches, red; July; herbaceous.

*Bowiei*, six inches, crimson; October; a fine bulbous species.

*Deppei*, three inches, red; March; a beautiful bulbous species.

*Caprina*, three inches, flesh; August; bulbous.

*Flava*, six inches, yellow; March; bulbous.

*Reptatrix*, three inches, flesh; November; bulbous.

*Rigidula*, six inches, white; September; bulbous.

*Speciosa*, three inches, purple; October; bulbous.

*Tetraphylla*, three inches, purple; June; bulbous.

*Versicolor*, three inches, crimson; February; a valuable species for winter flowers, bulbous.

*Variabilis grandiflora*, three inches, white; November; bulbous.

*Variabilis Simsii*, three inches, white; November; bulbous.





3 2044 102 883 477

bottom may be clay. There will be no need for drainage, because water will escape freely from any mass of earth raised above the level, and as there will be a good bulk of soil, the ferns will luxuriate, owing to the constantly damp condition of their roots. On this bank plant out varieties of *Scolopendrium vulgare* only, and the affair will have a character quite unique and intensely interesting. Here are a few of the finest and cheapest for the purpose—*crispum*, *marginatum*, *laceratum*, *digitatum*, *ramosum*, *supralineatum*, *multiforme*, *ramosum majus*, *multifidum*, *proliferum*, and *crista galli*. These are all obtainable at from half-a-crown to four shillings each; if I name any more, I must deal with guineas.

Turfy yellow loam lightened with cocoa-nut refuse in the proportion of one-third or one half will suit the varieties of British ferns better than any other general compost; in fact, peat is only fit for those of delicate habit, and it has a starving tendency when used in pots. There is nothing like a mixture of Wanstead loam and cocoa-nut waste, and a Pickard case for a collection of the smaller varieties of British ferns, and the style to plant them as represented in the sketch.

As most of the ferns described are of sufficient value to make it worth while to propagate them, the grower should secure spores if possible, and treat them as already recommended in these pages. They generally come true from spores, and when they sport away again to some new form, it is as likely to be a novelty as the normal form from which the deviation occurred originally. But as very many of the varieties are stubbornly barren, division of the crown is the only safe and certain method of multiplying them. The simplest way is to wait until the crown is naturally duplicated, and then effect a division, but the expert fern-grower need not wait for that. A plump single crown, when just about to start into new growth, may be divided with perfect safety, and the operation needs only ordinary care. Turn out the plant, lay the ball unbroken on the potting-board; with a large, sharp, strong knife cut it through into two equal halves, entering the knife at the centre of the crown, and passing on through the rhizome and the roots. Pot these halves in small pots, with extra drainage, the semi-crown of each rather high up, and with silver sand next the incised portion, and place at once in a moist heat, either in a Waltonian, Pickard, or even a dung-bed. Give only enough water to keep the roots moderately moist, and in time the half plant will acquire completeness, and grow as it should do, when it should have a shift into a turfy compost. This mode of propagating should be practised with plants of the common hart's-tongue fern for the sake of practice, so that having acquired skill in dividing the crowns of ferns, the amateur will be enabled to deal in the same way, and with perfect safety, with plants costing one or more guineas each.

As I cannot make space for an address of thanks to our contributors correspondents, and friends generally, I will in a word acknowledge with gratitude the favours shown to the FLORAL WORLD during the past, and assure its supporters that no reasonable effort shall be spared to render it more and more useful and interesting in the future. The budget opened in 1858 is still full, and I see before me many very important subjects that will claim attention during 1863. For the present, then, let me combine with my thanks a hearty wish for happiness to all, a merry Christmas, and a happy New Year.

SHIRLEY HIBBERD.

## CULTURE OF LILIUMS AND SELECTION OF SPECIES AND VARIETIES.

LILIES have long been celebrated for their rare and chaste beauty, and cannot be too strongly recommended; they are handsome ornaments either for pots in conservatory or drawing-room, in the greenhouse or in the open borders. The soil for border varieties, such as candidum, tigrinum, etc., etc., need only be a good garden loam well mixed with sand; for pot culture rather more care is requisite: the handsomest sorts for this purpose are the different varieties of speciosum or lancifolium (which, protected from frost, grow equally well out of doors, and are beautiful in the extreme). Do not use pots less than six inches in diameter, and let them be well drained at the bottom with broken pieces of tile and brick; half fill the pot with a compost of equal parts of rich garden soil, fibry loam, peat, or leaf-mould, and silver sand; then insert the bulbs, carefully surrounding the base with silver sand, and fill the pot until within an inch of the rim; place the pots in a cold frame, pit, or greenhouse during the winter months, and do not water until the bulbs show signs of growth above ground: when growth is perceptible, water freely, and continue as appearances suggest the necessity. Those required for early blooming should be kept under glass, whilst those for later blooming may be left out of doors, being, however, carefully protected from frost. When in bloom, let them be placed in a cool dry place, with a free current of air: the month of October is perhaps the best of all for planting. November will do as well, and the bulbs ought to be fresh out of the ground, long exposure injures them.

Repot as soon as the stems die down, taking care to give an entire change of soil. The number of bulbs required for each pot is quite a matter of individual taste; but we may observe that from three to six bulbs in an eleven-inch pot show magnificently. We think it may be safely affirmed that, for intrinsic

beauty, the varieties of *Lilium lancifolium* are unequalled by any other flower; and their cost, which may appear at first sight rather high, is indeed trifling.

Such magnificent kinds as *giganteum* should not be allowed to be dry in winter, nor yet kept quite dark, though rested as respects temperature and comparative dryness. Though, as stated above, many may be potted when the stems are great, all the tenderer kinds had better remain a few weeks longer, to give the bulbs time to mature: such kinds as the varieties of *speciosum* are best kept in a cellar or dampish close shed during winter. If below the stage of a greenhouse, and the pots stand upright, they are apt from drip to get too wet; and if laid down, and much fire-heat is used, to get too dry: in a cellar the pots will absorb a sufficiency of moisture to keep them plump, and not enough to gorge them with watery juices. Such lilies, except examining the drainage and picking off a little of the surface soil, and removing the smaller bulbs, flower best if the ball is otherwise little disturbed; but rich top-dressings are given as the flower-stems begin to show in spring, when they must be placed in a pit or greenhouse until danger of frost is over.

*Lilium atrosanguineum maculatum*, greenhouse; blood, spotted; two feet; Japan. *L. aurantiacum*, border; dark orange; four feet; Italy. *L. Canadense*, border; yellow; four feet; N. America. *L. candidum* (common garden lily), border; white; three feet; Levant. *L. candidum flore pleno*, double, border; white; three feet; garden variety. *L. Catesbæi*, border; orange; one foot; Carolina. *L. chalcidonicum*, border; scarlet; four feet; Levant. *L. croceum*, border; yellow; three feet; N. America. *L. dauricum* (syn. *Pennsylvanicum*), border; light orange; two feet; Dauria. *L. excelsum* (syn. *testaceum*), greenhouse; nankeen; three feet; Japan. *L. eximium*, greenhouse; white; four feet; Japan.

*L. giganteum*, greenhouse; white striped; six feet; Nepaul. *L. Kamtschatkense* (*Fritillaria lanceolata*), border; dark purple; nine inches; Kamtschatka. *L. japonicum*, greenhouse; white; two feet; China. *L. longiflorum*, border; white; two feet; China. *L. Martagon purpureum*, border; purple; three feet; Germany. *L. Martagon flavum*, border; yellow; three feet; garden variety. *L. Martagon rubrum*, border; red; three feet, garden variety. *L. mondelphicum*, border; yellow; two feet; Caucasus. *L. Philadelphicum*, border; orange, spotted; five feet; N. America. *L. pom-*

*ponium*, border; scarlet; two feet; Siberia. *L. pyrenaicum*, border; dark orange; two feet; Pyrenees. *L. speciosum* (*lanicifolium*) album, greenhouse; white-spotted; three feet; Japan. *L. speciosum punctatum*, roseum, greenhouse; rose-spotted; three feet; Japan. *L. Takesima*, greenhouse; white; two and a-half feet; Japan. *L. Thunbergianum*, greenhouse; deep orange; one and a-half feet; Japan. *L. tigrinum*, border; spotted orange; four feet; China. *L. venustum*, border; white; one and a-half feet; China.—*Carter's Autumn List.*

### ROSE CATALOGUES.

As this month is the most favourable in the whole year for planting and alterations in the rosery, perhaps a few words on rose catalogues may not be considered out of season. There are few things more useful and entertaining to an amateur than a good collection of catalogues. They not only serve to keep him well informed as to the progress and popularity of his favourite flower, but afford a never failing amusement, whether in the retrospect of former trials and successes, or in the anticipation of future triumphs.

Among the numerous lists of eminent growers which have fallen under my notice this season, the following appear to be decidedly the best. Though differing in many respects, they all have some peculiar good quality, which I purpose pointing out for the benefit of intending purchasers, who, by consulting them, will be able to satisfy all their requirements, however diverse or expensive they may be.

Messrs. Wood and Son, of Woodlands Nursery, Uckfield, Sussex, have adopted, what has always appeared to me a desirable plan, viz., that of affixing the *number* of the *nursery* tally to each variety. This not only saves trouble in making out orders, but enables a visitor to the grounds to inspect plants at his leisure by means of a catalogue, without the necessity of taking a man from his regular employment to accompany

him for explanations, the consciousness of which by no means adds to one's enjoyment. The descriptions of the varieties, old and new, are copious and correct, and the notes and observations instructive. For the benefit of admirers of roses on their own roots, it may be remarked that the Messrs. Wood grow, perhaps, the largest stock of such in the kingdom, particularly in pots.

The Messrs. Fraser, of the Lea Bridge Road, have a large and choice selection of first-rate varieties, especially of the newer kinds, and the prices are very moderate for the superior style of plants these gentlemen are noted for sending out.

Mr. J. Cranston, of King's Acre, Hereford, has forty pages of valuable matter. The literary portion of his catalogue is excellent, and it would be well worth purchasing as an adjunct to his little work on *Rose Culture*, did he not present it on application. The hybrid perpetuals and Bourbons are each divided into two sections of merit, and the habit of every variety is specified, a great advantage in planting beds and borders. The feature of pointing out varieties suitable for town culture is, however, wanting. Mr. C. has returned to the former tariff for dwarfs of older favourites, viz., one shilling each, while many growers still charge eighteenpence for such, by far too high after the last mild winter.

Mr. W. Paul's catalogue is, as might be expected, a first-rate production, and possesses the desirable point of particularizing certain sorts suitable for cultivation in the neighbourhood of towns. Messrs. Paul and Son's, of the "Old Nurseries," is very similar, having in addition an intermediate scale of prices for half-standards, a great accommodation and saving to many whose climate and locality are not favourable to standards.

Mr. Rivers has improved upon his last year's meagre list by adding some interesting notes, but unfortunately his catalogue, from its size, is not suited for binding up with others.

Now what an instructive and convenient catalogue might be made were all the good points enumerated in the above united in one. Still, I would ask, is it not possible to organize a more systematic and complete method of classification for the purposes of the cultivator. For instance, certain well-known and established varieties, decidedly distinct in habit of growth and form of flower, might be selected as types of classes, and others of similar characteristics arranged under them. Colour, and minor peculiarities, might follow as secondary details. Every novelty could then be referred to its appropriate section, and those sufficiently distinct would stand by themselves as heads of new divisions. By means of some such arrangement, amateurs would be enabled to realize something like a correct idea of any given flower from its description, by referring it to some kind with which they are already acquainted; at present, without actual sight or knowledge, purchasing is a mere lottery, too often followed

by disappointment and discouragement. The following, I think, might be taken as representative flowers, under which might be collected a great number of our best varieties:—H. P.'s B. Prevost, La Reine, Lord Raglan, W. Jesse, Comtesse Chabillant, Jules Margottin, and, perhaps, Eveque de Nîmes, etc., etc.; and among Bourbons, Louise Odier, G. Peabody, or Paul Joseph Paxton, and S. de la Malmaison. The tans and noisettes are so similar that the system would scarcely require extending to them, still it might be so if thought proper.

In throwing out these suggestions I must beg they may be taken merely as hints for the consideration of more experienced adepts than myself; indeed, it would require a long and intimate acquaintance with the flower, and extensive opportunities for experiment and observation to thoroughly carry out the plan. Mr. Hibberd (the Isaac Walton of suburban rose-growers, if I may take the liberty of calling him so) is just the man to do it, and I am sure he would be adding to the pleasure and benefit he has already conferred upon numerous disciples even by making the attempt. Just one word on behalf of the trade. Whenever a catalogue is applied for through the post, a stamped and prepared envelope ought always to be sent for its transmission. It is quite tax enough upon their pockets to present gratuitously to applicants such elaborate and well got up pamphlets as modern catalogues usually are, without having, in addition, the expense of postage, and the trouble of writing, perhaps, long addresses.

W. D. PRIOR.

Homerton, Oct. 14, 1862.

## FRUIT TREES IN BORDERS *VERSUS* FRUIT TREES IN POTS.

At this season, when many of our readers will be thinking of adding to their establishments some form of orchard-house, it may not be amiss to consider as to whether trees in pots, or trees planted out should have the preference.

It is true that Mr. Rivers, with his thorough knowledge of the principles of gardening, and a considerable amount of enthusiasm for his favourite hobby, has arrived at such results in the pot culture of fruits, that he has succe~~ss~~

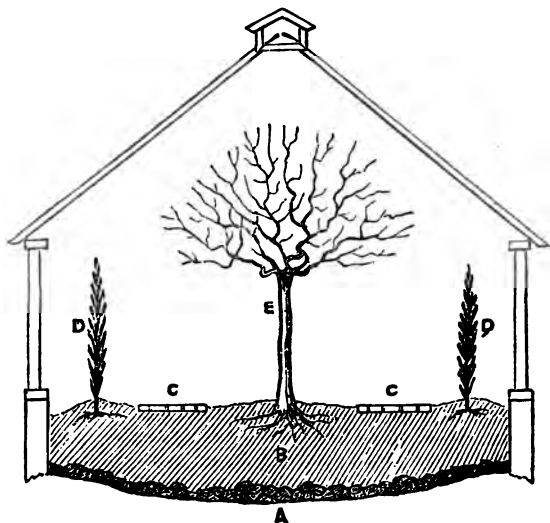
numberless converts, many of whom have succeeded perfectly with their trees, but as the necessary knowledge is not possessed by all who betake themselves to the culture of pot trees—as I can testify from observations made on visiting some orchard-houses during the past summer—it may not be amiss to consider the subject somewhat in detail for the benefit of such. It is possible to deduce facts from failures, which, if properly considered, show us wherein we are in error. Now I fancy that if I describe a house of trees, in what a critic would consider an unsatisfactory state, and one as occasionally seen under the care of a thorough good gardener, I may enable my readers to judge how far their several charges approach to either the one or the other. If on entering an orchard-house, a pale or yellowish hue seem to pervade the foliage, it is a sign of the presence of red spider, and red spider is a sure attendant upon starved or suffocated trees, rendering their leanness still worse by sucking from the foliage the juices that should be there elaborated to recruit the stamina of the trees, and enable them to carry their crops to perfection. If badly affected with this pest, the trees often shed their fruit, or if it ripen, it is small and flavourless, the wood of the tree becomes weak and attenuated, and unfit to carry a crop the following year. In such a house a practical gardener would perceive an undue amount of heat, or a dry, uncomfortable atmosphere. If he touched the soil in the pots, he would probably find it approaching dryness; besides which he might perceive that the pots were much too small for the size of the trees. If he inquired further, he would find that the trees had not been syringed until the spider had actually made its appearance, and then perhaps not in a business-like manner (a dewing over with the syringe is not enough; they must be battered on all sides, and especially the undersides of the leaves); that they received water at the root by rule, say once a-day, and then, perhaps, in homœopathic doses.

On the other side, to go into a house where the trees are well cared for, the foliage is luxuriant, of the colour of a Portugal laurel, the air soft and moist, the trees in pots proportioned to the size of the tree. The soil, whether in the pots or the borders on which they stand, rich and mellow, and perhaps mulched with short stable litter to protect the pots from the direct rays of the sun. If he investigated further he would find that the soil consisted of half-decayed turves, old cow-dung, and a sprinkling of soot and bone-dust; that water was filtered through soot and cow-dung, to mix at discretion with the soft water which was applied, not by rule, but according to circumstances, once a-week, once a-day, or three times a-day, if they demanded it; that as much old soil as could be removed from the top of the pot, without injury to the roots, was every winter removed and fresh supplied. That the trees at the same time were dressed with a mixture of soft soap and sulphur, and the walls washed with lime and sulphur; further, that green-fly had been carefully looked for in spring, and the moment it was perceived, syringed with tobacco-wash, or fumigated with tobacco paper. That the blossoms had been brushed over with a soft brush to distribute the pollen, and thus secure the setting of a regular crop of fruit, and that the fruit when thus set had been early thinned, so as not to waste the energies of the trees. That cold winds and severe frosts had been denied free egress, by closing the ventilators on the windward side; yet that perfect ventilation had never been omitted when it could be safely permitted; that the syringe, or what is better, a small engine, had been constantly used every morning (since the setting of the fruit), when there was a prospect of a clear day; and again every bright and warm afternoon, just before the sunbeams ceased to play upon the house. My readers will be enabled now to judge how far their practice has fallen short of the above, and perhaps feel appalled at the amount of attention apparently necessary to perfect success in the

pot culture of fruits, yet the attention is necessary, and it is attention to the minutiae that makes the successful gardener. This I know many amateurs cannot find time for, hence the observations I am about to make, which would, I doubt not, if carried out, enable persons so situated to reap a crop with greater certainty than by the pot system.

The plan I mean is to plant out the trees in prepared borders, so as to render them less susceptible of injury from slight neglects; the plan is by no means new, it has been advocated by several writers, and is practised by many of the best gardeners of the

fully kept in view in the accompanying sketch, and as such a house could be erected at as little cost as it is possible to erect an efficient structure, I shall not be wasting space in describing it. It is set upon nine-inch brick foundations, which rise nine inches above the ground level. Upon these a plate of oak timber is laid; into this deal studs, three feet apart, are morticed, and on them again, at the height of five feet, a plate of deal is laid to receive the rafters and astrigals, or bars into which the glass is glazed. The superstructure at the top is for the purpose of giving air, and is composed of thin boards, the



A

day, but usually in houses of greater pretensions than Mr. Rivers's orchard-house. Yet these houses of Mr. Rivers are as well adapted for the planting out as for the pot system; the difference required is in the preparation of the border, the form of the house mattering but little, so long as no fundamental principles are violated, and these are, a situation open to the south, or thereabout; glass to the ground, or nearly so, that all the light possible may be admitted, and plenty of opening ventilators, that there may be no lack of air when required. These points are

two side ones hung on joints, and having a lever screwed on the inside, to which a string is tied, and carried down behind a pulley to the side of the house, for the purpose of pulling them open. Every alternate light between the side studs is made to turn upon pivots for the purpose of giving air. The width of the house inside is sixteen feet, and the height eleven feet.

A, represents a drain laid along the centre, in case water in excess should find its way in, and on each side of the drain is a layer of brick-bats, rammed down to prevent the roots

of the trees reaching the subsoil. B, the border, from two to two and a-half feet deep, of good fresh soil, composed of half-rotted turves from a field. C, spline racks to walk upon. These should be made in convenient lengths, that they may be removed in case a tree requires lifting, etc. D, espalier peaches and nectarines on the south side, and figs and plums on the north side. E, standard peaches and nectarines.

By such an arrangement as this, all other things being equal, a great quantity of fruit would be produced in a small house. The amount of care and attention necessary would be far less than it would be to carry out in good style a house of pot trees, and the risk of spoiling the crop from occasional neglect, far

less as the trees are in a more natural position, and therefore I am induced to recommend its adoption. It must not be forgotten, however, that the border, being under cover, receives no moisture from the atmosphere, therefore abundant watering will be necessary, especially when the trees are swelling a crop of fruit. But then one good watering will suffice for several days, whereas a man that has a house of pot-trees must always be watching them. The same attention to airing, syringing, and setting the fruit blossom, pinching back shoots that are not required to form the tree, etc., will, however, be necessary, as well in the house where trees are planted out, as in that in which the trees are in pots.

*Whitwell.*

H. HOWLETT.

### MIXED FLOWER BORDERS.

THE following suggestions are extracted from the "Florist's Journal" of 1840, and they occur in a paper on Flower Gardens by Mr. R. Plant:—

A plot of ground solely devoted to the growth of flowers should be of such a size that it can be easily managed, so that each individual plant in it may have its proper modicum of attention and care; it being an acknowledged fact, that there is more pleasure in the possession of a few well-grown plants, than can be derived from a large yet badly grown collection.

It matters little what the shape of it is—a square or circular form is, perhaps, the best; but if the situation can be chosen, the southern side of a hill is best adapted to the growth of such plants as are usually found in flower-gardens. The laying out depends entirely on the taste of the person engaged in it; and nothing can be found in which good taste and sound judgment may be displayed to more advantage.

It should be so arranged that every part may harmonize with the whole. It is a question often argued, whether a flower-garden should be in unison with the surrounding scenery,

or not. We are in favour of the contrast; for what can be more pleasing than, amid a rugged landscape, to observe a small spot verdant and level, where nature seems to have collected her choicest gems; and, on the contrary, when surrounded by an open flat country, a diversified surface, scattered over with innumerable beauties, will arrest the attention of the most indifferent.

If grass or water can be introduced with proper effect, they are great ornaments; yet nothing can be worse than the appearance of little narrow edgings of grass, continually out of order, looking like a tuft here and there the gardener had neglected to remove. In such cases, an edging of box is by far the neatest; and though more expensive at first, it is more durable. The principal walks should be at least three feet in width, with a good substratum of stones or brick rubbish, and a gentle rise towards the centre of the surface, which will keep them dry, and prevent moss from growing on them.

We now come to the arrangement of the plants. Where sufficient space may be commanded, small beds, filled entirely with one kind of plant, form



n excellent method, inasmuch as the plants have usually more room, and are, consequently, better grown; saving, for instance, a bed of dahlias at the back, one of roses before them, and in front, a bed of some pretty and free-flowering annual. Or they may be composed of two or more distinct varieties, or even genera, observing to choose such plants as require the same soil and treatment, and are of similar habits, yet of contrary colours. This, though more difficult, is perhaps the best, as it rings the different colours in closer contact, and affords a richer contrast. We subjoin a list of a few of the most appropriate plants for mixing, intending them merely as an illustration of what we have said, there being many theresequally suitable for the purpose.

Where there is not room for so many beds as would be required to obtain a sufficient number of plants to obtain the desired effect, they may be planted together; taking care to keep the tallest at the back, or centre, so the case may require, bringing them down by a gentle gradation, till you have the humble mignonette, the pretty nemophila, or sparkling iceland, at your feet.

*Angallis Phillipsii* (blue), with *A. grandiflora superba* (red), one foot.

*Campanula Lorei* (white) with blue var., one foot.

*Campanula Garganica* (white) with blue var., one foot six inches.

*Escholtzia crocea* (yellow) with *Nemophila atomaria* (blue), one foot.

*Clintonia pulchella* (blue) with *Schyzopetalon Walkeri* (white), two feet.

*Heliotropium corymbosum* (lilac) with *Gaillardia nana* (orange), two feet.

*Lobelia propinquens* (scarlet) with *L. azurea* (blue), three feet.

*Lobelia cardinalis* (red) with *Commelina cœlestis* (blue) three feet.

*Nemophila insignis* (blue) with *N. atomaria*, var. *alba*, one foot.

*Plumbago capensis* (blue) with *Phlox Drummondii* (crimson), two feet.

*Sollya heterophylla* (blue) with *fuchsia*, in varieties, two feet.

*Verbenas*, in varieties.

In conclusion, we shall just remark that those plants usually denominated "florists' flowers," are better in beds by themselves, than when grouped with other plants, both with respect to management and general appearance.

## THE CULTURE OF OXALIS.

THE genus *Oxalis* is a very extensive one, and contains plants differing widely in their habits, and therefore when brought into cultivation requiring entirely different modes of treatment. For instance, the lovely *O. amana* is a truncated bulb, increasing itself by thrusting its offsets from its sides, exactly parallel to itself, and forming altogether a fascicle of roots that are never altogether dormant. It is a greenhouse plant, beginning to push vigorously in the month of March, when it should be encouraged to grow by watering liberally, and placing in as light a position as possible; by the middle of May it will have made a quantity of both foliage and flowers, when it may be turned into a warm border, where it will

make quite a cushion of its exquisitely rosy satin-like flowers throughout the entire summer. About the middle of October pot it carefully in a conveniently sized pot, according to the size of the plant, using equal parts fibrous peat and turfy loam, and one-sixth silver-sand, and stow away for the winter in as light a position as possible, because it makes gentle growth throughout the entire winter. If it is desired to keep and flower in a pot instead of the open ground, encourage with a liberal shift early in May into the above-named compost. These remarks upon *O. amana* will apply to all those members of the group of which it is a type.

*O. Bowiei* is a familiar type of another portion of the genus, as dif-

appearance when forming a cushion in a crevice in the front of a sheltered rockery. I know nothing at all of *inaxpletum* which Mr. Sim sent out about three years since, but I name it because a friend tells me it is one of the most curious of this series, and is quite constant. Of the sports of lady fern sent out by Messrs. Ivery, of Dorking, the best is undoubtedly *Frisellie*, and here it is sketched from the life, from a plant which I had of Mr. Williams, of Seven Sisters' Nursery, Holloway, and which, since it was sketched in the summer, has been artificially rested and set growing again, and threatens soon to bear dividing into four good crowns. It is very regular in the disposition of the cuneated pinnae, and when grown to a good size, has a very distinct appearance in the fern-house. But there are three others worth having, and they are *Ioeryanum*, short stiff fronds, remotely resembling the last; *muconatum*, with depauperated fronds, the pinnae three-lobed; and *Parsonie*, a seedling raised by Mrs. Parsons, in which the gauntness of the others of this series is quite out-done, and a somewhat new character established in the distinction between the fertile and barren fronds.



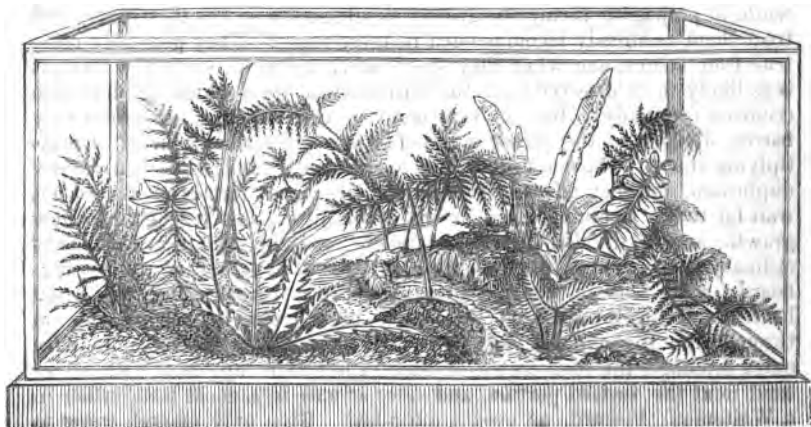
ADIANTUM FILIX-FOEMINA, VAR. FRIZELLUM.

Among the Blechnums, the best variety for amateurs is *heterophyllum*, but a good plant will cost a guinea; *strictum* is a very striking variety, and equally dear; *ramosum*, divided and crested, is the rarest of them all, and I suppose we could not buy a plant of it under a guinea and a-half. But we may pass this section by for the present, and look at *Lastrea*, where we have some splendid varieties. Take *L. dilatata cristata*, with its forked and crested fronds; *L. filix-mas crispata*, with its crispy wavy pinnules; *polydactyla*, tasselled all down, and when grown to a good size, a most noble object; *paleacea*, more noble still, with yellowish young fronds, and the rachis of the mature fronds painted a rich umber brown, and the habit grand and graceful. These are all best dealt with as pot plants, but the next is good for pots or outdoors, and is the best known of all fern varieties. This is *L. filix-mas cristata*, the margins frilled, crested, divided, and the boldly arching fronds terminating in fishtail appendages. This is undoubtedly the finest hardy fern known, and may be bought for half-a-crown in a small state, but specimen plants produce a guinea each, and are worth the money. Mr. Sim has a sport from the last called *cristata-angusta*, which is in fact a smaller edition of it, equally

hardy, profusely frilled, and the fronds arching over with consummate grace.

*Polypodium vulgare*, like *Blechnum spicant*, supplies a few sports that are more curious than beautiful, and though rare and costly, not worth much for limited collections. But we must make exception in favour of *P. v. cambricum*, the broad fronds are deeply cut and the pinnules overlap so as to produce a massive verdure; this is always barren and can only be increased by dividing the crown. Others worth having are *bifidum*, with forked fronds, really handsome, and cheap; *cristatum*, with crested tufts, very rare, and worth a guinea, or more; *multiforme*, with some approach to thorns on the mid-rib, a rare fern; *semilacerum*, well known as a handsome variety, toothed irregularly when grown to a good size; and *Omnilacerum*, toothed all over, and very elegant. This last is a rare and expensive variety.

The most fanciful in sports is our old hedgerow friend *Scolopendrium vulgare*. Sim has about fifty distinct varieties. Ivery and Stansfield class a few not classed by Sim. Moore and Lowe describe several not to



PICKARD'S PLANT-CASE.

be found in any trade catalogues; so there must be over a hundred varieties of this one fern, and nearly all of them are as hardy as the parent species. To describe even the *crème de la crème* of this series is now impossible; we must have a special word about them hereafter. For the present let me recommend the lover of ferns to appropriate to a collection of these one side of a greenhouse which is kept pretty warm all winter. It will be of course the shady side in which they will be most at home, but the aspect is not of much consequence, because the plantation can be kept in shadow by very simple arrangements. Along the side of the whole throw up a bank consisting of one part bog, one part turfy loam, and one part leaf-mould, the whole well chopped over. The bank may be from ten to four feet wide, according to the space at command, and is to be faced with burrs or stone, to give it the character of a rockery. In height it may range from two to four feet, nor to be less than two feet, and if there is any scarcity of stuff for it, one foot at the

bottom may be clay. There will be no need for drainage, because water will escape freely from any mass of earth raised above the level, and as there will be a good bulk of soil, the ferns will luxuriate, owing to the constantly damp condition of their roots. On this bank plant out varieties of *Scolopendrium vulgare* only, and the affair will have a character quite unique and intensely interesting. Here are a few of the finest and cheapest for the purpose—*crispum*, *marginatum*, *laceratum*, *digitatum*, *ramosum*, *supralineatum*, *multiforme*, *ramosum majus*, *multifidum*, *proliferum*, and *crista galli*. These are all obtainable at from half-a-crown to four shillings each; if I name any more, I must deal with guineas.

Turfy yellow loam lightened with cocoa-nut refuse in the proportion of one-third or one half will suit the varieties of British ferns better than any other general compost; in fact, peat is only fit for those of delicate habit, and it has a starving tendency when used in pots. There is nothing like a mixture of Wanstead loam and cocoa-nut waste, and a Pickard case for a collection of the smaller varieties of British ferns, and the style to plant them as represented in the sketch.

As most of the ferns described are of sufficient value to make it worth while to propagate them, the grower should secure spores if possible, and treat them as already recommended in these pages. They generally come true from spores, and when they sport away again to some new form, it is as likely to be a novelty as the normal form from which the deviation occurred originally. But as very many of the varieties are stubbornly barren, division of the crown is the only safe and certain method of multiplying them. The simplest way is to wait until the crown is naturally duplicated, and then effect a division, but the expert fern-grower need not wait for that. A plump single crown, when just about to start into new growth, may be divided with perfect safety, and the operation needs only ordinary care. Turn out the plant, lay the ball unbroken on the potting-board; with a large, sharp, strong knife cut it through into two equal halves, entering the knife at the centre of the crown, and passing on through the rhizome and the roots. Pot these halves in small pots, with extra drainage, the semi-crown of each rather high up, and with silver sand next the incised portion, and place at once in a moist heat, either in a Waltonian, Pickard, or even a dung-bed. Give only enough water to keep the roots moderately moist, and in time the half plant will acquire completeness, and grow as it should do, when it should have a shift into a turfy compost. This mode of propagating should be practised with plants of the common hart's-tongue fern for the sake of practice, so that having acquired skill in dividing the crowns of ferns, the amateur will be enabled to deal in the same way, and with perfect safety, with plants costing one or more guineas each.

As I cannot make space for an address of thanks to our contributors, correspondents, and friends generally, I will in a word acknowledge with gratitude the favours shown to the FLORAL WORLD during the past year, and assure its supporters that no reasonable effort shall be spared to render it more and more useful and interesting in the future. The budget of 1858 is still full, and I see before me many very important subjects which will claim attention during 1863. For the present, then, let me add with my thanks a hearty wish for happiness to all, a merry Christmas, and a happy New Year.

SHIRLEY H.

## CULTURE OF LILIUMS AND SELECTION OF SPECIES AND VARIETIES.

LILIES have long been celebrated for their rare and chaste beauty, and cannot be too strongly recommended; they are handsome ornaments either for pots in conservatory or drawing-room, in the greenhouse or in the open borders. The soil for border varieties, such as *candidum*, *tigrinum*, etc., etc., need only be a good garden loam well mixed with sand; for pot culture rather more care is requisite: the handsomest sorts for this purpose are the different varieties of *speciosum* or *lancifolium* (which, protected from frost, grow equally well out of doors, and are beautiful in the extreme). Do not use pots less than six inches in diameter, and let them be well drained at the bottom with broken pieces of tile and brick; half fill the pot with a compost of equal parts of rich garden soil, fibry loam, peat, or leaf-mould, and silver sand; then insert the bulbs, carefully surrounding the base with silver sand, and fill the pot until within an inch of the rim; place the pots in a cold frame, pit, or greenhouse during the winter months, and do not water until the bulbs show signs of growth above ground: when growth is perceptible, water freely, and continue as appearances suggest the necessity. Those required for early blooming should be kept under glass, whilst those for later blooming may be left out of doors, being, however, carefully protected from frost. When in bloom, let them be placed in a cool dry place, with a free current of air: the month of October is perhaps the best of all for planting. November will do as well, and the bulbs ought to be fresh out of the ground, long exposure injures them.

Repot as soon as the stems die down, taking care to give an entire change of soil. The number of bulbs required for each pot is quite a matter of individual taste; but we may observe that from three to six bulbs in an eleven-inch pot show magnificently. We think it may be safely affirmed that, for intrinsic

beauty, the varieties of *Lilium lancifolium* are unequalled by any other flower; and their cost, which may appear at first sight rather high, is indeed trifling.

Such magnificent kinds as *giganteum* should not be allowed to be dry in winter, nor yet kept quite dark, though rested as respects temperature and comparative dryness. Though, as stated above, many may be potted when the stems are great, all the tenderer kinds had better remain a few weeks longer, to give the bulbs time to mature: such kinds as the varieties of *speciosum* are best kept in a cellar or dampish close shed during winter. If below the stage of a greenhouse, and the pots stand upright, they are apt from drip to get too wet; and if laid down, and much fire-heat is used, to get too dry: in a cellar the pots will absorb a sufficiency of moisture to keep them plump, and not enough to gorge them with watery juices. Such lilies, except examining the drainage and picking off a little of the surface soil, and removing the smaller bulbs, flower best if the ball is otherwise little disturbed; but rich top-dressings are given as the flower-stems begin to show in spring, when they must be placed in a pit or greenhouse until danger of frost is over.

*Lilium atrosanguineum maculatum*, greenhouse; blood, spotted; two feet; Japan. *L. aurantiacum*, border; dark orange; four feet; Italy. *L. Canadense*, border; yellow; four feet; N. America. *L. candidum* (common garden lily), border; white; three feet; Levant. *L. candidum flore pleno*, double, border; white; three feet; garden variety. *L. Catesbæi*, border; orange; one foot; Carolina. *L. chalcedonicum*, border; scarlet; four feet; Levant. *L. croceum*, border; yellow; three feet; N. America. *L. longifolium* (syn. *Pennsylvanicum*), border; orange; two feet; Pennsylvania. *L. testaceum*, border; yellow; three feet; N. America.

*L. giganteum*, greenhouse; white striped; six feet; Nepaul. *L. Kamtschatkense* (*Fritillaria lanceolata*), border; dark purple; nine inches; Kamtschatka. *L. japonicum*, greenhouse; white; two feet; China. *L. longiflorum*, border; white; two feet; China. *L. Martagon purpureum*, border; purple; three feet; Germany. *L. Martagon flavum*, border; yellow; three feet; garden variety. *L. Martagon rubrum*, border; red; three feet, garden variety. *L. mondelpicum*, border; yellow; two feet; Caucasus. *L. Philadelphicum*, border; orange, spotted; five feet; N. America. *L. pom-*

*ponium*, border; scarlet; two feet; Siberia. *L. pyrenaicum*, border; dark orange; two feet; Pyrenees. *L. speciosum* (*lancifolium*) album, greenhouse; white-spotted; three feet; Japan. *L. speciosum punctatum*, roseum, greenhouse; rose-spotted; three feet; Japan. *L. Takesima*, greenhouse; white; two and a-half feet; Japan. *L. Thunbergianum*, greenhouse; deep orange; one and a-half feet; Japan. *L. tigrinum*, border; spotted orange; four feet; China. *L. venustum*, border; white; one and a-half feet; China.—*Carter's Autumn List.*

### ROSE CATALOGUES.

As this month is the most favourable in the whole year for planting and alterations in the rosery, perhaps a few words on rose catalogues may not be considered out of season. There are few things more useful and entertaining to an amateur than a good collection of catalogues. They not only serve to keep him well informed as to the progress and popularity of his favourite flower, but afford a never failing amusement, whether in the retrospect of former trials and successes, or in the anticipation of future triumphs.

Among the numerous lists of eminent growers which have fallen under my notice this season, the following appear to be decidedly the best. Though differing in many respects, they all have some peculiar good quality, which I purpose pointing out for the benefit of intending purchasers, who, by consulting them, will be able to satisfy all their requirements, however diverse or expensive they may be.

Messrs. Wood and Son, of Woodlands Nursery, Uckfield, Sussex, have adopted, which has always appeared to me a desirable plan, viz., that of affixing the number of the nursery tally to each variety. This not only saves trouble in making out orders, but enables a visitor to the grounds to inspect plants at his leisure by means of a catalogue, without the necessity of taking a man from his regular employment to accompany

him for explanations, the consciousness of which by no means adds to one's enjoyment. The descriptions of the varieties, old and new, are copious and correct, and the notes and observations instructive. For the benefit of admirers of roses on their own roots, it may be remarked that the Messrs. Wood grow, perhaps, the largest stock of such in the kingdom, particularly in pots.

The Messrs. Fraser, of the Lea Bridge Road, have a large and choice selection of first-rate varieties, especially of the newer kinds, and the prices are very moderate for the superior style of plants these gentlemen are noted for sending out.

Mr. J. Cranston, of King's Acre, Hereford, has forty pages of valuable matter. The literary portion of his catalogue is excellent, and it would be well worth purchasing as an adjunct to his little work on *Rose Culture*, did he not present it on application. The hybrid perpetuals and Bourbons are each divided into two sections of merit, and the habit of every variety is specified, a great advantage in planting beds and borders. The feature of pointing out varieties suitable for town culture is, however, wanting. Mr. C. has returned to the former tariff for dwarfs of older favourites, viz., one shilling each, while many growers still charge eighteenpence for such, by far too high after the last mild winter.

Mr. W. Paul's catalogue is, as might be expected, a first-rate production, and possesses the desirable point of particularizing certain sorts suitable for cultivation in the neighbourhood of towns. Messrs. Paul and Son's, of the "Old Nurseries," is very similar, having in addition an intermediate scale of prices for half-standards, a great accommodation and saving to many whose climate and locality are not favourable to standards.

Mr. Rivers has improved upon his last year's meagre list by adding some interesting notes, but unfortunately his catalogue, from its size, is not suited for binding up with others.

Now what an instructive and convenient catalogue might be made were all the good points enumerated in the above united in one. Still, I would ask, is it not possible to organize a more systematic and complete method of classification for the purposes of the cultivator. For instance, certain well-known and established varieties, decidedly distinct in habit of growth and form of flower, might be selected as types of classes, and others of similar characteristics arranged under them. Colour, and minor peculiarities, might follow as secondary details. Every novelty could then be referred to its appropriate section, and those sufficiently distinct would stand by themselves as heads of new divisions. By means of some such arrangement, amateurs would be enabled to realize something like a correct idea of any given flower from its description, by referring it to some kind with which they are already acquainted; at present, without actual sight or knowledge, purchasing is a mere lottery, too often followed

by disappointment and discouragement. The following, I think, might be taken as representative flowers, under which might be collected a great number of our best varieties:—H. P.'s B. Prevost, La Reine. Lord Raglan, W. Jesse, Comtesse Chabillant, Jules Margottin, and, perhaps, Eveque de Nîmes, etc., etc.; and among Bourbons, Louise Odier, G. Peabody, or Paul Joseph, Paxton, and S. de la Malmaison. The teas and noisettes are so similar that the system would scarcely require extending to them, still it might be so if thought proper.

In throwing out these suggestions I must beg they may be taken merely as hints for the consideration of more experienced adepts than myself; indeed, it would require a long and intimate acquaintance with the flower, and extensive opportunities for experiment and observation to thoroughly carry out the plan. Mr. Hibberd (the Isaac Walton of suburban rose-growers, if I may take the liberty of calling him so) is just the man to do it, and I am sure he would be adding to the pleasure and benefit he has already conferred upon numerous disciples even by making the attempt. Just one word on behalf of the trade. Whenever a catalogue is applied for through the post, a stamped and prepared envelope ought always to be sent for its transmission. It is quite tax enough upon their pockets to present gratuitously to applicants such elaborate and well got up pamphlets as modern catalogues usually are, without having, in addition, the expense of postage, and the trouble of writing, perhaps, long addresses.

W. D. PRIOR.

Homerton, Oct. 14, 1862.

## FRUIT TREES IN BORDERS *VERSUS* FRUIT TREES IN POTS.

At this season, when many of our readers will be thinking of adding to their establishments some form of orchard-house, it may not be amiss to consider as to whether trees in pots, or trees planted out should have the preference.

It is true that Mr. Rivers, with his thorough knowledge of the principles of gardening, and a considerable amount of enthusiasm for his favourite hobby, has arrived at the conclusion that he has succeeded in

numberless converts, many of whom have succeeded perfectly with their trees, but as the necessary knowledge is not possessed by all who betake themselves to the culture of pot trees—as I can testify from observations made on visiting some orchard-houses during the past summer—it may not be amiss to consider the subject somewhat in detail for the benefit of such. It is possible to deduce facts from failures, which, if properly considered, show us wherein we are in error. Now I fancy that if I describe a house of trees, in what a critic would consider an unsatisfactory state, and one as occasionally seen under the care of a thorough good gardener, I may enable my readers to judge how far their several charges approach to either the one or the other. If on entering an orchard-house, a pale or yellowish hue seem to pervade the foliage, it is a sign of the presence of red spider, and red spider is a sure attendant upon starved or suffocated trees, rendering their leanness still worse by sucking from the foliage the juices that should be there elaborated to recruit the stamina of the trees, and enable them to carry their crops to perfection. If badly affected with this pest, the trees often shed their fruit, or if it ripen, it is small and flavourless, the wood of the tree becomes weak and attenuated, and unfit to carry a crop the following year. In such a house a practical gardener would perceive an undue amount of heat, or a dry, uncomfortable atmosphere. If he touched the soil in the pots, he would probably find it approaching dryness; besides which he might perceive that the pots were much too small for the size of the trees. If he inquired further, he would find that the trees had not been syringed until the spider had actually made its appearance, and then perhaps not in a business-like manner (a dewing over with the syringe is not enough; they must be battered on all sides, and especially the undersides of the leaves); they received water at the root rule, say once a-day, and then, haps, in homœopathic doses.

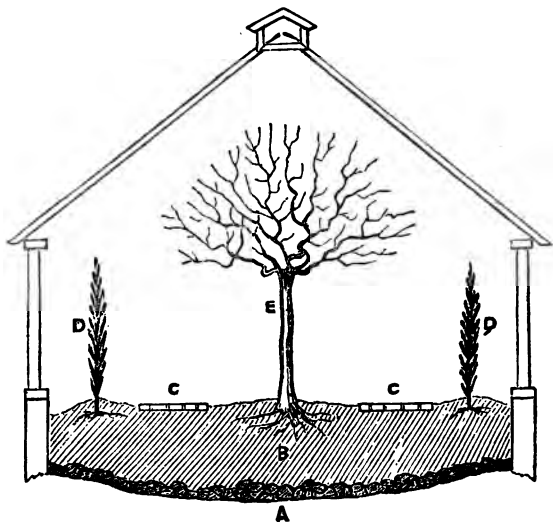
On the other side, to go into a house where the trees are well cared for, the foliage is luxuriant, of the colour of a Portugal laurel, the air soft and moist, the trees in pots proportioned to the size of the tree. The soil, whether in the pots or the borders on which they stand, rich and mellow, and perhaps mulched with short stable litter to protect the pots from the direct rays of the sun. If he investigated further he would find that the soil consisted of half-decayed turves, old cow-dung, and a sprinkling of soot and bone-dust; that water was filtered through soot and cow-dung, to mix at discretion with the soft water which was applied, not by rule, but according to circumstances, once a-week, once a-day, or three times a-day, if they demanded it; that as much old soil as could be removed from the top of the pot, without injury to the roots, was every winter removed and fresh supplied. That the trees at the same time were dressed with a mixture of soft soap and sulphur, and the walls washed with lime and sulphur; further, that green-fly had been carefully looked for in spring, and the moment it was perceived, syringed with tobacco-wash, or fumigated with tobacco paper. That the blossoms had been brushed over with a soft brush to distribute the pollen, and thus secure the setting of a regular crop of fruit, and that the fruit when thus set had been early thinned, so as not to waste the energies of the trees. That cold winds and severe frosts had been denied free egress, by closing the ventilators on the windward side; yet that perfect ventilation had never been omitted, so that it could be safely permitted; that a syringe, or what is better, a fine syringe, had been constantly used, and the setting was a perfect one; that again every noon, just before the sun began to play upon the foliage, the trees will be enabled to receive their proper amount of light, above, and below, and in amount, and in quantity, to



pot culture of fruits, yet the attention is necessary, and it is attention to the minutiae that makes the successful gardener. This I know many amateurs cannot find time for, hence the observations I am about to make, which would, I doubt not, if carried out, enable persons so situated to reap a crop with greater certainty than by the pot system.

The plan I mean is to plant out the trees in prepared borders, so as to render them less susceptible of injury from slight neglects; the plan is by no means new, it has been advocated by several writers, and is practised by many of the best gardeners of the

fully kept in view in the accompanying sketch, and as such a house could be erected at as little cost as it is possible to erect an efficient structure, I shall not be wasting space in describing it. It is set upon nine-inch brick foundations, which rise nine inches above the ground level. Upon these a plate of oak timber is laid; into this deal studs, three feet apart, are morticed, and on them again, at the height of five feet, a plate of deal is laid to receive the rafters and astrigals, or bars into which the glass is glazed. The superstructure at the top is for the purpose of giving air, and is composed of thin boards, the



day, but usually in houses of greater pretensions than Mr. Rivers's orchard-house. Yet these houses of Mr. Rivers are as well adapted for the planting out as for the pot system; the difference required is in the preparation of the border, the form of house mattering but little, so no fundamental principles are involved, and these are, a situation to the south, or thereabout; a level ground, or nearly so, that the possible may be advantageously of opening ventilation may be no lack of light. These points are

two side ones hung on joints, and having a lever screwed on the inside, to which a string is tied, and carried down behind a pulley to the side of the house, for the purpose of pulling them open. Every alternate light between the side studs is made to turn upon pivots for the purpose of giving air. The width of the house inside is sixteen feet, and the height eleven feet.

A, represents a drain laid along the centre, in case water in excess should find its way in, and on each side of the drain is a layer of brick-bats, rammed down to prevent the roots

## HARDY FERN VARIETIES.

As there is nobody without a collection of British ferns, it will, of course, be a folly to recommend the species for culture on banks, in damp dells, among roots, and in pots and rockeries in the greenhouse. We may even go so far now in our conceit about ferns to say that people who don't grow them are beyond the pale of our consideration, and *we*, the fern-growers, may draw together as a knot of exclusives hugging ourselves in the thought that we have gone far beyond the rest of mankind, and have left to us in behalf of the rest of the world only the emotion of pity. Our language will be peculiar to ourselves. We shall talk of peat as bread, and *Athyrium filix-fœmina* as the mysterious badge of our order, a name which none are to pronounce unless gifted like us with a phytological madness. But we have to discover yet the breadth and purpose of this fancy; for fancy it is, mind you, however objectionable, from its relation to bull-dogs, the term may be; and there are two outlets from the magic circle in which we have pledged our troth to love the ferns for ever, alive or dead, and talk of them wherever we go as the most beautiful of all material creations—except, of course, ourselves. First, we must search out all the fern varieties, and discover *how to originate varieties*; and then we must sift over the exotic ferns, and make up our minds which to have and which to refuse for adding to the fernery out of doors and in the cool greenhouse. Our noble Osmund Royal is completely eclipsed by some of the American Osmundas. Our Lastreas and Lady ferns, and Polypodies have terrible rivals among the foreigners that are like them; and, when we get into fern-growing, the first few dozens of sorts will be like so many nest eggs, each to become the centre of a large brood, all with certain family likenesses. This matter will furnish out a new feature for the FLORAL WORLD next year, and to stretch forth our hands with welcome to 1863, let us now have a few words about hardy fern varieties.

First, then, a word of caution. We love freedom and independence, and so have no wish to fetter our friends in their choice of subjects, but we must advise them not to be in too great haste to buy new ferns unless they are recommended in the FLORAL WORLD. For this reason, that, since it has become a fashion to name and “send out” every variety that presents itself, a vast number of trivial and useless varieties are now in the market, and those who buy all will serve as illustrations of the adage that some people and their money are soon parted. Of *Blechnum spicant*, *Athyrium f. f.*, and *Scolopendrium vulgare*, vagrant sports are constantly occurring; and, if all were named and registered, immense lists might be made up, but, by the time the lists were printed, three-fourths of the entries would have become fictitious, or at least representative of trivial facts that had ceased to be. No fern sport should have a name until it is proved to be permanent, and then it should have no place in garden lists, unless it has distinctness of character and is in some way or other striking, curious, or beautiful. Many of the recently-published sports of the Lady fern have no beauty at all; nevertheless, they are worth growing as curiosities of nature, and may often suggest a new train of thought to the students of phytology, and especially to the believers in the Goethian theories of morphology. How these variations come about is a mystery; but we get some clue to the secret in the fact that they occur more fre-

quently under artificial than under natural circumstances. Many distinct fern varieties are met with wild, but more have arisen in plant-houses and gardens, where we may suppose that the constitution of the plant is sometimes submitted to some kind of violence. Last summer I was not a little surprised to see among some plants of *Blechnum spicant*, specimens with forked fronds, each frond terminating in a bifid acumination, and those plants might have been taken up, sent to the Floral Committee, have had a certificate, and then been proved at last to be useless; for, as it happened, they were left alone, and, after producing a number of bifid fronds, they reverted to the normal form, and there is not now a bifid frond to be found upon them. We may not be able to check the foolish haste with which trivial variations are named and published, but we can refrain from buying them until they are fairly proven, and then take them at their proper worth. I will here indicate a few really valuable varieties of British ferns, which fern-growers should look after as indispensable. Among the forms of *Asplenium marinum* there are three that merit attention, namely, *ramosum*, with wavy branched fronds, amongst which a few fronds occur with a branched rachis bearing fronds again. This is a small and most distinct fern of a beautiful deep green hue, glossy like the parent, and also like it well adapted for the Wardian case. Another is *ramo-trapeziforme*, the point of each frond twice branched, and a very curious and pretty fern indeed. This is quite tender, though of true British extraction, and the best place for it is a Pickard's case, where it can have bottom-heat, or a warm greenhouse or stove, where, with a moist atmosphere, it will keep true to its variant character. The third is a variety for everybody, which differs from the normal form only in superior robustness of habit and erect growth, and one of the best of all British ferns for Wardian cases.

Among the sportive forms of the hardy fern, we meet with the most acceptable of all fern variations. When Mr. Sim sent out *A. f. f. corymbiferum* at 15s., it was figured in the FLORAL WORLD as a most valuable thing for amateurs. Its behaviour has more than justified the recommendation. The original plant, which the cut at page 228 of the first volume of this work represents, has been four times divided at the crown, and it now occupies a position at the base of a bank, and covered a space twenty-four inches square this season, a mass of delicate tasselled fronds, and having the peculiar habit of multiplying itself by internal extensions of the crown. There are so many varieties of this species that we may be fastidious in collecting; my choice lies among *multifidum*, which is like the normal form, but with the points widened into fans and the pinnæ tasselled all the way down, and with a little of the purplish tint of *purpurea*. A similar but less beautiful and less constant variety is *semidepauperatum*, the fronds of which are tasselled on one side and pauperized on the other so as to be unequally tasselled all over. This is less desirable than the next, called *depauperatum* (*monstrosus*), which has a succulent appearance, the fronds narrow and spreading, and each ending in fishtail appendages. This is a very remarkable fern variety, and well worthy the three or four shillings for which it may now be bought. Another charming thing is *crispum*, very dwarf, excessively tasselled, so as to look like parsley, and, in fact, a good substitute for *Nephrodium molle*, var. *corymbiferum*, the most beautiful of all the parsley-like ferns, but tender, whereas *A. f. f. crispum* is as hardy as its parent, and has a love'

## HARDY FERN VARIETIES.

As there is nobody without a collection of British ferns, it will, of course, be a folly to recommend the species for culture on banks, in damp dells, among roots, and in pots and rockeries in the greenhouse. We may even go so far now in our conceit about ferns to say that people who don't grow them are beyond the pale of our consideration, and *we*, the fern-growers, may draw together as a knot of exclusives hugging ourselves in the thought that we have gone far beyond the rest of mankind, and have left to us in behalf of the rest of the world only the emotion of pity. Our language will be peculiar to ourselves. We shall talk of peat as bread, and *Athyrium filix-fœmina* as the mysterious badge of our order, a name which none are to pronounce unless gifted like us with a phytological madness. But we have to discover yet the breadth and purpose of this fancy; for fancy it is, mind you, however objectionable, from its relation to bull-dogs, the term may be; and there are two outlets from the magic circle in which we have pledged our troth to love the ferns for ever, alive or dead, and talk of them wherever we go as the most beautiful of all material creations—except, of course, ourselves. First, we must search out all the fern varieties, and discover *how to originate varieties*; and then we must sift over the exotic ferns, and make up our minds which to have and which to refuse for adding to the fernery out of doors and in the cool greenhouse. Our noble Osmund Royal is completely eclipsed by some of the American Osmundas. Our Lastreas and Lady ferns, and Polypodies have terrible rivals among the foreigners that are like them; and, when we get into fern-growing, the first few dozens of sorts will be like so many nest eggs, each to become the centre of a large brood, all with certain family likenesses. This matter will furnish out a new feature for the FLORAL WORLD next year, and to stretch forth our hands with welcome to 1863, let us now have a few words about hardy fern varieties.

First, then, a word of caution. We love freedom and independence, and so have no wish to fetter our friends in their choice of subjects, but we must advise them not to be in too great haste to buy new ferns unless they are recommended in the FLORAL WORLD. For this reason, that, since it has become a fashion to name and “send out” every variety that presents itself, a vast number of trivial and useless varieties are now in the market, and those who buy all will serve as illustrations of the adage that some people and their money are soon parted. Of *Blechnum spicant*, *Athyrium f. f.*, and *Scolopendrium vulgare*, vagrant sports are constantly occurring; and, if all were named and registered, immense lists might be made up, but, by the time the lists were printed, three-fourths of the entries would have become fictitious, or at least representative of trivial facts that had ceased to be. No fern sport should have a name until it is proved to be permanent, and then it should have no place in garden lists, unless it has distinctness of character and is in some way or other striking, curious, or beautiful. Many of the recently-published sports of the Lady fern have no beauty at all; nevertheless, they are worth growing as curiosities of nature, and may often suggest a new train of thought to the students of phytology, and especially to the believers in the Goethian theories of morphology. How these variations come about is a mystery; but we get some clue to the secret in the fact that they occur more fre-

quently under artificial than under natural circumstances. Many distinct fern varieties are met with wild, but more have arisen in plant-houses and gardens, where we may suppose that the constitution of the plant is sometimes submitted to some kind of violence. Last summer I was not a little surprised to see among some plants of *Blechnum spicant*, specimens with forked fronds, each frond terminating in a bifid acumination, and those plants might have been taken up, sent to the Floral Committee, have had a certificate, and then been proved at last to be useless; for, as it happened, they were left alone, and, after producing a number of bifid fronds, they reverted to the normal form, and there is not now a bifid frond to be found upon them. We may not be able to check the foolish haste with which trivial variations are named and published, but we can refrain from buying them until they are fairly proven, and then take them at their proper worth. I will here indicate a few really valuable varieties of British ferns, which fern-growers should look after as indispensable. Among the forms of *Asplenium marinum* there are three that merit attention, namely, *ramosum*, with wavy branched fronds, amongst which a few fronds occur with a branched rachis bearing fronds again. This is a small and most distinct fern of a beautiful deep green hue, glossy like the parent, and also like it well adapted for the Wardian case. Another is *ramo-trapeziforme*, the point of each frond twice branched, and a very curious and pretty fern indeed. This is quite tender, though of true British extraction, and the best place for it is a Pickard's case, where it can have bottom-heat, or a warm greenhouse or stove, where, with a moist atmosphere, it will keep true to its variant character. The third is a variety for everybody, which differs from the normal form only in superior robustness of habit and erect growth, and one of the best of all British ferns for Wardian cases.

Among the sportive forms of the hardy fern, we meet with the most acceptable of all fern variations. When Mr. Sim sent out *A. f. f. corymbiferum* at 15s., it was figured in the FLORAL WORLD as a most valuable thing for amateurs. Its behaviour has more than justified the recommendation. The original plant, which the cut at page 228 of the first volume of this work represents, has been four times divided at the crown, and it now occupies a position at the base of a bank, and covered a space twenty-four inches square this season, a mass of delicate tasselled fronds, and having the peculiar habit of multiplying itself by internal extensions of the crown. There are so many varieties of this species that we may be fastidious in collecting; my choice lies among *multifidum*, which is like the normal form, but with the points widened into fans and the pinnæ tasselled all the way down, and with a little of the purplish tint of *purpurea*. A similar but less beautiful and less constant variety is *semidepauperatum*, the fronds of which are tasselled on one side and pauperized on the other so as to be unequally tasselled all over. This is less desirable than the next, called *depauperatum* (monstrosus), which has a succulent appearance, the fronds narrow and spreading, and each ending in fishtail appendages. This is a very remarkable fern variety, and well worthy the three or four shillings for which it may now be bought. Another charming thing is *crispum*, very dwarf, excessively tasselled, so as to look like parsley, and, in fact, a good substitute for *Nephrodium molle*, var. *corymbiferum*, the most beautiful of all the parsley-like ferns, but tender, whereas *A. f. f. crispum* is as hardy as its parent, and has a lovely

appearance when forming a cushion in a crevice in the front of a sheltered rockery. I know nothing at all of *inexpletum* which Mr. Sim sent out about three years since, but I name it because a friend tells me it is one of the most curious of this series, and is quite constant. Of the sports of lady fern sent out by Messrs. Ivery, of Dorking, the best is undoubtedly *Frizellie*, and here it is sketched from the life, from a plant which I had of Mr. Williams, of Seven Sisters' Nursery, Holloway, and which, since it was sketched in the summer, has been artificially rested and set growing again, and threatens soon to bear dividing into four good crowns. It is very regular in the disposition of the cuneated pinnæ, and when grown to a good size, has a very distinct appearance in the fern-house. But there are three others worth having, and they are *Iveryanum*, short stiff fronds, remotely resembling the last; *mucronatum*, with depauperated fronds, the pinnæ three-lobed; and *Parsonia*, a seedling raised by Mrs. Parsons, in which the gauntness of the others of this series is quite out-done, and a somewhat new character established in the distinction between the fertile and barren fronds.



ASPLENIUM FILIX-FEMINA, VAR. FRIZELLIE.

Among the Blechnums, the best variety for amateurs is *heterophyllum*, but a good plant will cost a guinea; *strictum* is a very striking variety, and equally dear; *ramosum*, divided and crested, is the rarest of them all, and I suppose we could not buy a plant of it under a guinea and a-half. But we may pass this section by for the present, and look at *Lastrea*, where we have some splendid varieties. Take *L. dilatata cristata*, with its forked and crested fronds; *L. filix-mas crispa*, with its crispy wavy pinnules; *polydactyla*, tasselled all down, and when grown to a good size, a most noble object; *paleacea*, more noble still, with yellowish young fronds, and the rachis of the mature fronds painted a rich umber brown, and the habit grand and graceful. These are all best dealt with as pot plants, but the next is good for pots or outdoors, and is the best known of all fern varieties. This is *L. filix-mas cristata*, the margins frilled, crested, divided, and the boldly arching fronds terminating in fishtail appendages. This is undoubtedly the finest hardy fern known, and may be bought for half-a-crown in a small state, but specimen plants produce a guinea each, and are worth the money. Mr. Sim has a sport from the last called *cristata-angusta*, which is in fact a smaller edition of it, equally

hardy, profusely frilled, and the fronds arching over with consummate grace.

*Polypodium vulgare*, like *Blechnum spicant*, supplies a few sports that are more curious than beautiful, and though rare and costly, not worth much for limited collections. But we must make exception in favour of *P. v. cambricum*, the broad fronds are deeply cut and the pinnules overlap so as to produce a massive verdure; this is always barren and can only be increased by dividing the crown. Others worth having are *bifidum*, with forked fronds, really handsome, and cheap; *cristatum*, with crested tufts, very rare, and worth a guinea, or more; *multiforme*, with some approach to thorns on the mid-rib, a rare fern; *semilacerum*, well known as a handsome variety, toothed irregularly when grown to a good size; and *Ommilacerum*, toothed all over, and very elegant. This last is a rare and expensive variety.

The most fanciful in sports is our old hedgerow friend *Scolopendrium vulgare*. Sim has about fifty distinct varieties. Ivery and Stansfield class a few not classed by Sim. Moore and Lowe describe several not to



PICKARD'S PLANT-CASE.

be found in any trade catalogues; so there must be over a hundred varieties of this one fern, and nearly all of them are as hardy as the parent species. To describe even the *crème de la crème* of this series is now impossible; we must have a special word about them hereafter. For the present let me recommend the lover of ferns to appropriate to a collection of these one side of a greenhouse which is kept pretty warm all winter. It will be of course the shady side in which they will be most at home, but the aspect is not of much consequence, because the plantation can be kept in shadow by very simple arrangements. Along the side of the whole throw up a bank consisting of one part bog, one part turfy loam, and one part leaf-mould, the whole well chopped over. The bank may be from ten to four feet wide, according to the space at command, and is to be faced with burrs or stone, to give it the character of a rockery. In height it may range from two to four feet, nor to be less than two feet, and if there is any scarcity of stuff for it, one foot at the

bottom may be clay. There will be no need for drainage, because water will escape freely from any mass of earth raised above the level, and as there will be a good bulk of soil, the ferns will luxuriate, owing to the constantly damp condition of their roots. On this bank plant out varieties of *Scolopendrium vulgare* only, and the affair will have a character quite unique and intensely interesting. Here are a few of the finest and cheapest for the purpose—*crispum*, *marginatum*, *laceratum*, *digitatum*, *ramosum*, *supralineatum*, *multiforme*, *ramosum majus*, *multifidum*, *proliferum*, and *crista galli*. These are all obtainable at from half-a-crown to four shillings each; if I name any more, I must deal with guineas.

Turfy yellow loam lightened with cocoa-nut refuse in the proportion of one-third or one half will suit the varieties of British ferns better than any other general compost; in fact, peat is only fit for those of delicate habit, and it has a starving tendency when used in pots. There is nothing like a mixture of Wanstead loam and cocoa-nut waste, and a Pickard case for a collection of the smaller varieties of British ferns, and the style to plant them as represented in the sketch.

As most of the ferns described are of sufficient value to make it worth while to propagate them, the grower should secure spores if possible, and treat them as already recommended in these pages. They generally come true from spores, and when they sport away again to some new form, it is as likely to be a novelty as the normal form from which the deviation occurred originally. But as very many of the varieties are stubbornly barren, division of the crown is the only safe and certain method of multiplying them. The simplest way is to wait until the crown is naturally duplicated, and then effect a division, but the expert fern-grower need not wait for that. A plump single crown, when just about to start into new growth, may be divided with perfect safety, and the operation needs only ordinary care. Turn out the plant, lay the ball unbroken on the potting-board; with a large, sharp, strong knife cut it through into two equal halves, entering the knife at the centre of the crown, and passing on through the rhizome and the roots. Pot these halves in small pots, with extra drainage, the semi-crown of each rather high up, and with silver sand next the incised portion, and place at once in a moist heat, either in a Waltonian, Pickard, or even a dung-bed. Give only enough water to keep the roots moderately moist, and in time the half plant will acquire completeness, and grow as it should do, when it should have a shift into a turfy compost. This mode of propagating should be practised with plants of the common hart's-tongue fern for the sake of practice, so that having acquired skill in dividing the crowns of ferns, the amateur will be enabled to deal in the same way, and with perfect safety, with plants costing one or more guineas each.

As I cannot make space for an address of thanks to our contributors correspondents, and friends generally, I will in a word acknowledge with gratitude the favours shown to the FLORAL WORLD during the past, and assure its supporters that no reasonable effort shall be spared to render it more and more useful and interesting in the future. The budget opened in 1858 is still full, and I see before me many very important subjects that will claim attention during 1863. For the present, then, let me combine with my thanks a hearty wish for happiness to all, a merry Christmas, and a happy New Year.

SHIRLEY HIBBERD.



## CULTURE OF LILIUMS AND SELECTION OF SPECIES AND VARIETIES.

LILIES have long been celebrated for their rare and chaste beauty, and cannot be too strongly recommended; they are handsome ornaments either for pots in conservatory or drawing-room, in the greenhouse or in the open borders. The soil for border varieties, such as *candidum*, *tigrinum*, etc., etc., need only be a good garden loam well mixed with sand; for pot culture rather more care is requisite: the handsomest sorts for this purpose are the different varieties of *speciosum* or *lancifolium* (which, protected from frost, grow equally well out of doors, and are beautiful in the extreme). Do not use pots less than six inches in diameter, and let them be well drained at the bottom with broken pieces of tile and brick; half fill the pot with a compost of equal parts of rich garden soil, fibry loam, peat, or leaf-mould, and silver sand; then insert the bulbs, carefully surrounding the base with silver sand, and fill the pot until within an inch of the rim; place the pots in a cold frame, pit, or greenhouse during the winter months, and do not water until the bulbs show signs of growth above ground: when growth is perceptible, water freely, and continue as appearances suggest the necessity. Those required for early blooming should be kept under glass, whilst those for later blooming may be left out of doors, being, however, carefully protected from frost. When in bloom, let them be placed in a cool dry place, with a free current of air: the month of October is perhaps the best of all for planting. November will do as well, and the bulbs ought to be fresh out of the ground, long exposure injures them.

Repot as soon as the stems die down, taking care to give an entire change of soil. The number of bulbs required for each pot is quite a matter of individual taste; but we may observe that from three to six bulbs in an eleven-inch pot show magnificently. We think it may be safely affirmed that, for intrinsic

beauty, the varieties of *Lilium lancifolium* are unequalled by any other flower; and their cost, which may appear at first sight rather high, is indeed trifling.

Such magnificent kinds as *gigantum* should not be allowed to be dry in winter, nor yet kept quite dark, though rested as respects temperature and comparative dryness. Though, as stated above, many may be potted when the stems are great, all the tenderer kinds had better remain a few weeks longer, to give the bulbs time to mature: such kinds as the varieties of *speciosum* are best kept in a cellar or dampish close shed during winter. If below the stage of a greenhouse, and the pots stand upright, they are apt from drip to get too wet; and if laid down, and much fire-heat is used, to get too dry: in a cellar the pots will absorb a sufficiency of moisture to keep them plump, and not enough to gorge them with watery juices. Such lilies, except examining the drainage and picking off a little of the surface soil, and removing the smaller bulbs, flower best if the ball is otherwise little disturbed; but rich top-dressings are given as the flower-stems begin to show in spring, when they must be placed in a pit or greenhouse until danger of frost is over.

*Lilium atrosanguineum maculatum*, greenhouse; blood, spotted; two feet; Japan. *L. aurantiacum*, border; dark orange; four feet; Italy. *L. Canadense*, border; yellow; four feet; N. America. *L. candidum* (common garden lily), border; white; three feet; Levant. *L. candidum flore pleno*, double, border; white; three feet; garden variety. *L. Catesbæi*, border; orange; one foot; Carolina. *L. chalcedonicum*, border; scarlet; four feet; Levant. *L. croceum*, border; yellow; three feet; N. America. *L. dauricum* (syn. *Pennsylvanicum*), border; light orange; two feet; Dauria. *L. excelsum* (syn. *testaceum*), greenhouse; nankeen; three feet; Japan. *L. eximium*, greenhouse; white; four feet; Japan.

*L. giganteum*, greenhouse; white striped; six feet; Nepaul. *L. Kamtschatkense* (*Fritillaria lanceolata*), border; dark purple; nine inches; Kamtschatka. *L. japonicum*, greenhouse; white; two feet; China. *L. longiflorum*, border; white; two feet; China. *L. Martagon purpureum*, border; purple; three feet; Germany. *L. Martagon flavum*, border; yellow; three feet; garden variety. *L. Martagon rubrum*, border; red; three feet, garden variety. *L. mondelpicum*, border; yellow; two feet; Caucasus. *L. Philadelphicum*, border; orange, spotted; five feet; N. America. *L. pom-*

*ponium*, border; scarlet; two feet; Siberia. *L. pyrenaicum*, border; dark orange; two feet; Pyrenees. *L. speciosum* (*lancifolium*) album, greenhouse; white-spotted; three feet; Japan. *L. speciosum punctatum*, roseum, greenhouse; rose-spotted; three feet; Japan. *L. Takesima*, greenhouse; white; two and a-half feet; Japan. *L. Thunbergianum*, greenhouse; deep orange; one and a-half feet; Japan. *L. tigrinum*, border; spotted orange; four feet; China. *L. venustum*, border; white; one and a-half feet; China.—*Carter's Autumn List.*

### ROSE CATALOGUES.

As this month is the most favourable in the whole year for planting and alterations in the rosery, perhaps a few words on rose catalogues may not be considered out of season. There are few things more useful and entertaining to an amateur than a good collection of catalogues. They not only serve to keep him well informed as to the progress and popularity of his favourite flower, but afford a never failing amusement, whether in the retrospect of former trials and successes, or in the anticipation of future triumphs.

Among the numerous lists of eminent growers which have fallen under my notice this season, the following appear to be decidedly the best. Though differing in many respects, they all have some peculiar good quality, which I purpose pointing out for the benefit of intending purchasers, who, by consulting them, will be able to satisfy all their requirements, however diverse or expensive they may be.

Messrs. Wood and Son, of Woodlands Nursery, Uckfield, Sussex, have adopted, what has always appeared to me a desirable plan, viz., that of affixing the *number* of the *nursery tally* to each variety. This not only saves trouble in making out orders, but enables a visitor to the grounds to inspect plants at his leisure by means of a catalogue, without the necessity of taking a man from his regular employment to accompany

him for explanations, the consciousness of which by no means adds to one's enjoyment. The descriptions of the varieties, old and new, are copious and correct, and the notes and observations instructive. For the benefit of admirers of roses on their own roots, it may be remarked that the Messrs. Wood grow, perhaps, the largest stock of such in the kingdom, particularly in pots.

The Messrs. Fraser, of the Lea Bridge Road, have a large and choice selection of first-rate varieties, especially of the newer kinds, and the prices are very moderate for the superior style of plants these gentlemen are noted for sending out.

Mr. J. Cranston, of King's Acre, Hereford, has forty pages of valuable matter. The literary portion of his catalogue is excellent, and it would be well worth purchasing as an adjunct to his little work on *Rose Culture*, did he not present it on application. The hybrid perpetuals and Bourbons are each divided into two sections of merit, and the habit of every variety is specified, a great advantage in planting beds and borders. The feature of pointing out varieties suitable for town culture is, however, wanting. Mr. C. has returned to the former tariff for dwarfs of older favourites, viz., one shilling each, while many growers still charge eighteenpence for such, by far too high after the last mild winter.

Mr. W. Paul's catalogue is, as might be expected, a first-rate production, and possesses the desirable point of particularizing certain sorts suitable for cultivation in the neighbourhood of towns. Messrs. Paul and Son's, of the "Old Nurseries," is very similar, having in addition an intermediate scale of prices for half-standards, a great accommodation and saving to many whose climate and locality are not favourable to standards.

Mr. Rivers has improved upon his last year's meagre list by adding some interesting notes, but unfortunately his catalogue, from its size, is not suited for binding up with others.

Now what an instructive and convenient catalogue might be made were all the good points enumerated in the above united in one. Still, I would ask, is it not possible to organize a more systematic and complete method of classification for the purposes of the cultivator. For instance, certain well-known and established varieties, decidedly distinct in habit of growth and form of flower, might be selected as types of classes, and others of similar characteristics arranged under them. Colour, and minor peculiarities, might follow as secondary details. Every novelty could then be referred to its appropriate section, and those sufficiently distinct would stand by themselves as heads of new divisions. By means of some such arrangement, amateurs would be enabled to realize something like a correct idea of any given flower from its description, by referring it to some kind with which they are already acquainted; at present, without actual sight or knowledge, purchasing is a mere lottery, too often followed

by disappointment and discouragement. The following, I think, might be taken as representative flowers, under which might be collected a great number of our best varieties:—H. P.'s B. Prevost, La Reine, Lord Raglan, W. Jesse, Comtesse Chabillant, Jules Margottin, and, perhaps, Eveque de Nimes, etc., etc.; and among Bourbons, Louise Odier, G. Peabody, or Paul Joseph, Paxton, and S. de la Malmaison. The teas and noisettes are so similar that the system would scarcely require extending to them, still it might be so if thought proper.

In throwing out these suggestions I must beg they may be taken merely as hints for the consideration of more experienced adepts than myself; indeed, it would require a long and intimate acquaintance with the flower, and extensive opportunities for experiment and observation to thoroughly carry out the plan. Mr. Hibberd (the Isaac Walton of suburban rose-growers, if I may take the liberty of calling him so) is just the man to do it, and I am sure he would be adding to the pleasure and benefit he has already conferred upon numerous disciples even by making the attempt. Just one word on behalf of the trade. Whenever a catalogue is applied for through the post, a stamped and prepared envelope ought always to be sent for its transmission. It is quite tax enough upon their pockets to present gratuitously to applicants such elaborate and well got up pamphlets as modern catalogues usually are, without having, in addition, the expense of postage, and the trouble of writing, perhaps, long addresses.

W. D. PRIOR.

Homerton, Oct. 14, 1862.

## FRUIT TREES IN BORDERS *VERSUS* FRUIT TREES IN POTS.

At this season, when many of our readers will be thinking of adding to their establishments some form of orchard-house, it may not be amiss to consider as to whether trees in pots, or trees planted out should have the preference.

It is true that Mr. Rivers, with his thorough knowledge of the principles of gardening, and a considerable amount of enthusiasm for his favourite hobby, has arrived at such results in the pot culture of fruits, that he has succeeded in making

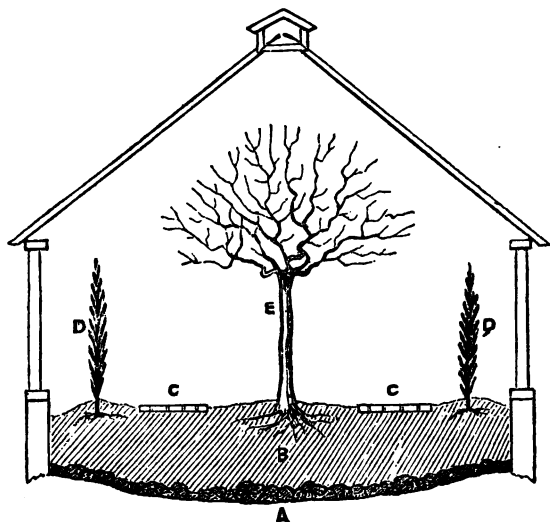
numberless converts, many of whom have succeeded perfectly with their trees, but as the necessary knowledge is not possessed by all who betake themselves to the culture of pot trees—as I can testify from observations made on visiting some orchard-houses during the past summer—it may not be amiss to consider the subject somewhat in detail for the benefit of such. It is possible to deduce facts from failures, which, if properly considered, show us wherein we are in error. Now I fancy that if I describe a house of trees, in what a critic would consider an unsatisfactory state, and one as occasionally seen under the care of a thorough good gardener, I may enable my readers to judge how far their several charges approach to either the one or the other. If on entering an orchard-house, a pale or yellowish hue seem to pervade the foliage, it is a sign of the presence of red spider, and red spider is a sure attendant upon starved or suffocated trees, rendering their leanness still worse by sucking from the foliage the juices that should be there elaborated to recruit the stamina of the trees, and enable them to carry their crops to perfection. If badly affected with this pest, the trees often shed their fruit, or if it ripen, it is small and flavourless, the wood of the tree becomes weak and attenuated, and unfit to carry a crop the following year. In such a house a practical gardener would perceive an undue amount of heat, or a dry, uncomfortable atmosphere. If he touched the soil in the pots, he would probably find it approaching dryness; besides which he might perceive that the pots were much too small for the size of the trees. If he inquired further, he would find that the trees had not been syringed until the spider had actually made its appearance, and then perhaps not in a business-like manner (a dewing over with the syringe is not enough; they must be battered on all sides, and especially the undersides of the leaves); that they received water at the root by rule, say once a-day, and then, perhaps, in homœopathic doses.

On the other side, to go into a house where the trees are well cared for, the foliage is luxuriant, of the colour of a Portugal laurel, the air soft and moist, the trees in pots proportioned to the size of the tree. The soil, whether in the pots or the borders on which they stand, rich and mellow, and perhaps mulched with short stable litter to protect the pots from the direct rays of the sun. If he investigated further he would find that the soil consisted of half-decayed turves, old cow-dung, and a sprinkling of soot and bone-dust; that water was filtered through soot and cow-dung, to mix at discretion with the soft water which was applied, not by rule, but according to circumstances, once a-week, once a-day, or three times a-day, if they demanded it; that as much old soil as could be removed from the top of the pot, without injury to the roots, was every winter removed and fresh supplied. That the trees at the same time were dressed with a mixture of soft soap and sulphur, and the walls washed with lime and sulphur; further, that green-fly had been carefully looked for in spring, and the moment it was perceived, syringed with tobacco-wash, or fumigated with tobacco paper. That the blossoms had been brushed over with a soft brush to distribute the pollen, and thus secure the setting of a regular crop of fruit, and that the fruit when thus set had been early thinned, so as not to waste the energies of the trees. That cold winds and severe frosts had been denied free egress, by closing the ventilators on the windward side; yet that perfect ventilation had never been omitted when it could be safely permitted; that the syringe, or what is better, a small engine, had been constantly used every morning (since the setting of the fruit), when there was a prospect of a clear day; and again every bright and warm afternoon, just before the sunbeams ceased to play upon the house. My readers will be enabled now to judge how far their practice has fallen short of the above, and perhaps feel appalled at the amount of attention apparently necessary to perfect success in the

pot culture of fruits, yet the attention is necessary, and it is attention to the minutiae that makes the successful gardener. This I know many amateurs cannot find time for, hence the observations I am about to make, which would, I doubt not, if carried out, enable persons so situated to reap a crop with greater certainty than by the pot system.

The plan I mean is to plant out the trees in prepared borders, so as to render them less susceptible of injury from slight neglects; the plan is by no means new, it has been advocated by several writers, and is practised by many of the best gardeners of the

fully kept in view in the accompanying sketch, and as such a house could be erected at as little cost as it is possible to erect an efficient structure, I shall not be wasting space in describing it. It is set upon nine-inch brick foundations, which rise nine inches above the ground level. Upon these a plate of oak timber is laid; into this deal studs, three feet apart, are morticed, and on them again, at the height of five feet, a plate of deal is laid to receive the rafters and astrigals, or bars into which the glass is glazed. The superstructure at the top is for the purpose of giving air, and is composed of thin boards, the



day, but usually in houses of greater pretensions than Mr. Rivers's orchard-house. Yet these houses of Mr. Rivers are as well adapted for the planting out as for the pot system; the difference required is in the preparation of the border, the form of the house mattering but little, so long as no fundamental principles are violated, and these are, a situation open to the south, or thereabout; glass to the ground, or nearly so, that all the light possible may be admitted, and plenty of opening ventilators, that there may be no lack of air when required. These points are

two side ones hung on joints, and having a lever screwed on the inside, to which a string is tied, and carried down behind a pulley to the side of the house, for the purpose of pulling them open. Every alternate light between the side studs is made to turn upon pivots for the purpose of giving air. The width of the house inside is sixteen feet, and the height eleven feet.

A, represents a drain laid along the centre, in case water in excess should find its way in, and on each side of the drain is a layer of brick-bats, rammed down to prevent the roots

of the trees reaching the subsoil. B, the border, from two to two and a-half feet deep, of good fresh soil, composed of half-rotted turves from a field. C, spline racks to walk upon. These should be made in convenient lengths, that they may be removed in case a tree requires lifting, etc. D, espalier peaches and nectarines on the south side, and figs and plums on the north side. E, standard peaches and nectarines.

By such an arrangement as this, all other things being equal, a great quantity of fruit would be produced in a small house. The amount of care and attention necessary would be far less than it would be to carry out in good style a house of pot trees, and the risk of spoiling the crop from occasional neglect, far

less as the trees are in a more natural position, and therefore I am induced to recommend its adoption. It must not be forgotten, however, that the border, being under cover, receives no moisture from the atmosphere, therefore abundant watering will be necessary, especially when the trees are swelling a crop of fruit. But then one good watering will suffice for several days, whereas a man that has a house of pot-trees must always be watching them. The same attention to airing, syringing, and setting the fruit blossom, pinching back shoots that are not required to form the tree, etc., will, however, be necessary, as well in the house where trees are planted out, as in that in which the trees are in pots.

Whitwell.

H. HOWLETT.

### MIXED FLOWER BORDERS.

THE following suggestions are extracted from the "Florist's Journal" of 1840, and they occur in a paper on Flower Gardens by Mr. R. Plant:—

A plot of ground solely devoted to the growth of flowers should be of such a size that it can be easily managed, so that each individual plant in it may have its proper modicum of attention and care; it being an acknowledged fact, that there is more pleasure in the possession of a few well-grown plants, than can be derived from a large yet badly grown collection.

It matters little what the shape of it is—a square or circular form is, perhaps, the best; but if the situation can be chosen, the southern side of a hill is best adapted to the growth of such plants as are usually found in flower-gardens. The laying out depends entirely on the taste of the person engaged in it; and nothing can be found in which good taste and sound judgment may be displayed to more advantage.

It should be so arranged that every part may harmonize with the whole. It is a question often argued, whether a flower-garden should be in unison with the surrounding scenery,

or not. We are in favour of the contrast; for what can be more pleasing than, amid a rugged landscape, to observe a small spot verdant and level, where nature seems to have collected her choicest gems; and, on the contrary, when surrounded by an open flat country, a diversified surface, scattered over with innumerable beauties, will arrest the attention of the most indifferent.

If grass or water can be introduced with proper effect, they are great ornaments; yet nothing can be worse than the appearance of little narrow edgings of grass, continually out of order, looking like a tuft here and there the gardener had neglected to remove. In such cases, an edging of box is by far the neatest; and though more expensive at first, it is more durable. The principal walks should be at least three feet in width, with a good substratum of stones or brick rubbish, and a gentle rise towards the centre of the surface, which will keep them dry, and prevent moss from growing on them.

We now come to the arrangement of the plants. Where sufficient space may be commanded, small beds, filled entirely with one kind of plant, form

an excellent method, inasmuch as the plants have usually more room, and are, consequently, better grown; having, for instance, a bed of dahlias at the back, one of roses before them, and in front, a bed of some pretty and free-flowering annual. Or they may be composed of two or more distinct varieties, or even genera, observing to choose such plants as require the same soil and treatment, and are of similar habits, yet of contrary colours. This, though more difficult, is perhaps the best, as it brings the different colours in closer contact, and affords a richer contrast. We subjoin a list of a few of the most appropriate plants for mixing, intending them merely as an illustration of what we have said, there being many other equally suitable for the purpose.

Where there is not room for so many beds as would be required to contain a sufficient number of plants to obtain the desired effect, they may be planted together; taking care to keep the tallest at the back, or centre, as the case may require, bringing them down by a gentle gradation, till you have the humble mignonette, the pretty nemophila, or sparkling ice-plant, at your feet.

*Angellia Phillipsii* (blue) with *A. grandiflora superba* (red), one foot.

*Campanula Lorei* (white) with blue var., one foot.

*Campanula Garganica* (white) with blue var., one foot six inches.

*Escholtzia crocea* (yellow) with *Nemophila atomaria* (blue), one foot.

*Clintonia pulchella* (blue) with *Schyzopetalon Walkeri* (white), two feet.

*Heliotropium corymbosum* (lilac) with *Gaillardia nana* (orange), two feet.

*Lobelia propinquens* (scarlet) with *L. azurea* (blue), three feet.

*Lobelia cardinalis* (red) with *Comelina cœlestis* (blue) three feet.

*Nemophila insignis* (blue) with *N. atomaria*, var. *alba*, one foot.

*Plumbago capensis* (blue) with *Phlox Drummondii* (crimson), two feet.

*Sollya heterophylla* (blue) with *fuchsia*, in varieties, two feet.

*Verbenas*, in varieties.

In conclusion, we shall just remark that those plants usually denominated "florists' flowers," are better in beds by themselves, than when grouped with other plants, both with respect to management and general appearance.

## THE CULTURE OF OXALIS.

THE genus *Oxalis* is a very extensive one, and contains plants differing widely in their habits, and therefore when brought into cultivation requiring entirely different modes of treatment. For instance, the lovely *O. amœna* is a truncated bulb, increasing itself by thrusting its offsets from its sides, exactly parallel to itself, and forming altogether a fascicle of roots that are never altogether dormant. It is a greenhouse plant, beginning to push vigorously in the month of March, when it should be encouraged to grow by watering liberally, and placing in as light a position as possible; by the middle of May it will have made a quantity of both foliage and flowers, when it may be turned into a warm border, where it will

make quite a cushion of its exquisitely rosy satin-like flowers throughout the entire summer. About the middle of October pot it carefully in a conveniently sized pot, according to the size of the plant, using equal parts fibrous peat and turfy loam, and one-sixth silver-sand, and stow away for the winter in as light a position as possible, because it makes gentle growth throughout the entire winter. If it is desired to keep and flower in a pot instead of the open ground, encourage with a liberal shift early in May into the above-named compost. These remarks upon *O. amœna* will apply to all those members of the group of which it is a type.

*O. Bowiei* is a familiar type of another portion of the genus, as dif-

ferent in its habits as though it belonged to quite another family. This plant blooms in September, October, and November; after flowering, it will retain its foliage until March, April, and May, which it should be encouraged to develop to the utmost, by placing on the shelf of the greenhouse as near the glass as possible, as on this (as in the case of all other bulbous plants) depends success in flowering. When the leaves begin to turn yellow, withhold water by degrees until they are quite dead; then place the pots in some position where water cannot reach them, until the beginning of August, when shake out the roots, and repot them, placing five or six bulbs in a 48 pot, using good mellow loam and leaf-mould, equal parts of each; if leaf-mould cannot be obtained, very old rotten manure will do equally well; water moderately at first, place in the full sun, and they will immediately start into growth and flower. The season of rest, etc., must be regulated by the period of blooming in all those possessing the characters of *O. Bowiei*.

We come now to mention the pretty little *O. acetosella*, which is always green and growing, and throughout nearly the whole of the summer is covered with its pretty white flowers. This plant has a creeping, transparent, fleshy fascicle, which roots at every joint; and this, and every member of the genus having the same character and habits, should be potted in the lightest soil; moss and leaf-mould, mixed in equal parts, suit them perfectly.

The transparent stems, the lively green leaves, the bushy habit, and the graceful contour altogether of *O. corniculata* form quite another character in the genus *Oxalis*. This pretty plant, with all of allied habit, delights in a good fat soil, not too retentive, and in a position where partial shade can be afforded, as it is only in such a position that the delicate greenness of the foliage and transparency of the stems, together with the gamboge yellow of its flowers, are brought clearly out.

The following species and varieties of *Oxalis* are extremely beautiful and admirably adapted for cultivation, as valuable additions to the choicest collection of plants.

#### HARDY.

*Corniculata*, three inches high, a yellow annual; August.

*Dillonii florida*, two feet, yellow annual; July.

*Sensitiva*, three inches, yellow annual; July.

*Americana*, three inches, white bulb; April.

#### GREENHOUSE.

*Rosea*, five inches, rose, under greenhouse culture, blooms during a period of six months; as a hardy annual, from June to September; it is a perfect gem. Raised from seeds or cuttings; does not form a bulb.

*Acetosella*, six inches, white; May to September; bulbous.

*Bifida*, nine inches, violet; September; bulbous.

*Elongata amena*, six inches, rose; July; bulbous.

*Floribunda*, eighteen inches, red; July; herbaceous.

*Bowiei*, six inches, crimson; October; a fine bulbous species.

*Deppei*, three inches, red; March; a beautiful bulbous species.

*Caprina*, three inches, flesh; August; bulbous.

*Flava*, six inches, yellow; March; bulbous.

*Reptatrix*, three inches, flesh; November; bulbous.

*Rigidula*, six inches, white; September; bulbous.

*Speciosa*, three inches, purple; October; bulbous.

*Tetraphylla*, three inches, purple; June; bulbous.

*Versicolor*, three inches, crimson; February; a valuable species for winter flowers, bulbous.

*Variabilis grandiflora*, three inches, white; November; bulbous.

*Variabilis Simsii*, three inches, white; November; bulbous.



## GARDENING FOR CHILDREN.

We have often wondered that among the lady writers on gardening there has hitherto been no attempt made to direct the passion for gardening which is so frequently exhibited in children. We see the little things planting daisies to-day and taking them up to-morrow, making miniature fences of willow wands, using the hoops of a tub to make a bridge, and planting cherry-stones in expectation of immense crops of cherries next year. This love of gardening among children might assuredly be directed, and with the best promise of good results. The care of a bit of garden would develop their powers of observation and comparison, make the doing something a habit rather than a fitful act, and teach as a lesson for life, that our amusements may be utilized and our hours of pleasure made subservient to good. We know of none among the writers of the day so well qualified to explain the art of gardening to children, and to encourage the little gardeners in their hobby, as the well known "M. E. M.," the author of "Indoor Plants," "Cragstone Cottage," etc., etc. We have, therefore, much pleasure in introducing to our readers "Birds and Flowers,"\* a lively, gossiping treatise on the two subjects named in the title, not simply adapted to the capacity of children, but conceived in the spirit of a child's mind. The following is a sample of it:—

### MAKING AN ARBOUR.

"There are so many ways of making a rustic summer-house, or arbour, that I hardly know which to describe the first. Tall, green boughs, stuck in and bent together, make a nice gipsy tent for a birthday feast; and that is the first arbour that I can remember helping to construct. Tall willow sticks, bound over and covered with climbing plants, are again very pretty. Yew trees, trained out over

a rough wooden frame, make a perfect shelter from the heaviest shower, and a delightfully thick and close-growing wall of green. Living shrubs interlaced, make also roofs and walls; a few stout posts being ample for keeping them in their places. And, lastly, a rough trellis-work of sticks crossed and recrossed, and overgrown with flowers and with ivy, makes a perfect picture of a summer-bower.

"I like the latter plan so very much the best, that it is the one that I will now describe, for I think after making it the others will all come easy.

"The first thing, then, is to plant four or six stout corner posts, according to the most wished-for shape. Young larch trees do best, and they may keep their bark on.

"Now and then there happen to be four trees growing in proper places, such as we can use; then the only thing would be to cut the tops and branches off; but this, I think, seldom happens except in desert islands.

"Having got, then, four stout larch posts, about one-third taller than we wish to make our ceiling, the next thing we have to do will be to sharpen the points that they may go into the ground, and to dip the ends into pitch that they may not decay. These posts then have to be driven into the ground *very* firmly indeed, and we must always mind that the distances are equal, and that our walls stand straight. The next thing should be to get some more larch posts, split in two, and to nail them firmly, or lef them into notches, from side-post to side-post.

"Supposing it to be a six-sided bower, and that you do not wish to have it rainproof, you will next fasten crossbars from one side post to the next but one, and so on, till all three are on; and then do the same again, taking the posts that you missed the first time. Long tough willow stems do the best for this; and having fastened, or tied a few with good strong tarred twine, like the sailors use on

\* "Birds and Flowers; or, the Children's Guide to Gardening and Bird-Keeping." London, published by Emily Faithful, Great Coram Street, London, W.C.

board ship, you may weave in the rest. Tarred cord, I must remind you, is not to be much used; it is useful in gardens, because a ring of it round a tree keeps hares and insects away; but in a flower garden it should never be used where it can brush against people, as it stains their clothes. If you want, however, to preserve your string, and keep your house in repair, you will paint over the cord you use with a little dark green paint, when it is used low down.

"The roof then has to be all wattled over. You can fancy easily how to work the willows, or "sallies," in and out, making a nice firm trellis. If you are really so ambitious as to wish the roof to be waterproof, you must make the framework very close indeed, and then you can lay on it a quantity of green moss, with the green side downwards; and then nail a piece of felt on, and cover that again with a fresh moss thatching, or even with one of straw. These roofs are very useful, but not half so pretty as a mere rustic shade; and if your garden is very near the house, I think it is a pity to spoil the look for such a doubtful pleasure. The roof requires, too, to be much higher on one side than on the other when you have it waterproof, and this sadly does away with the pretty Italian or Japanese square trellis.

"I think that flower gardens are mere summer pleasures, and in summer we want shade chiefly. In full view of the house, at any rate, you do not want a summer-house; so unless you are far away I am an advocate of the trellis plan, which is done so easily and always looks so nice.

"Having made your roof, you next may construct the walls, which is quite reversing all proper house building order. Nothing hardly is prettier than a crossed fence here again—a row of long sticks leaning one way, and another row going the other, on three of the sides of the six-sided bower. The interstices can be as large or as small as you like; or I have seen such bowers looking extremely pretty without any walls at all, and only surrounded by the six strong pillars. It

is an important question what to plant by these pillars.

"I think myself that each should have something evergreen, and then any extra flowers make it immensely gay. Many people like to have ivy, for when it grows well, nothing looks prettier, both in summer and winter; and there is also a delightful evergreen rose which does well in warm places; or you might have an evergreen shrub planted at each corner, besides many other things. Privet is very pretty, and makes a beautiful close green; I think it is quite a shame that it is so turned out of flower gardens, for unless myrtles grow well, as they do in the Isle of Wight, few plants are greener.

"A pretty box tree would do well here, too, or a little holly very well indeed, and then you would have at Christmas holly and ivy of your own peculiar growth. You ought to plant some evergreens if you mean to have a garden full of spring flowers in the early spring, which I would not miss for anything. Then there should be a vine or perhaps a Virginian-creeper, which grows very quickly and has red leaves in autumn, which hang on amidst the ivy for a long while sometimes.

"The ivy itself does not always grow very fast. People seem to fancy that it will grow anywhere, and does not want any care, which is a great mistake. If it were planted in plenty of good leaf-mould, like that which it would meet with under the trees in woods, and up against old walls, where heaps of leaves have laid till they have decayed, and if it were kept well watered, it would grow a great deal quicker, and cover all the framework in about half the time it takes when left alone. Have you ever noticed the pink China roses, growing amidst dark ivy and peeping out here and there? Even in the winter they will often look so pretty, and if any one should chance to have a tall holly tree, or an ivy-grown wall, by which they can plant a flower, I much advise them to put in a China rose, and some roots of great white convolvulus, of the kind called Calystegia.

"Sweet peas sown in-doors in

January, and also *Nasturtiums* and *Canariensis* sown in the ground in autumn, will make a great show in the first year, and *Cobea scandens*, also being sown in-doors in pots, may be grown quite spreading in time to plant out in May.

"*Jessamines*, too, and *honeysuckle* do beautifully; indeed, the prettiest quite that I have ever seen of these trellised bowers have been covered with ivy, with roses, and *honeysuckles*, and perhaps a vine and *clematis*, or white *jessamine*.

"The vine should be cut back a little in each autumn, because then the young shoots in spring will be greener and closer.

"Of course, when the trellis is covered you will want some seats, and, I dare say, a table; that would be a charming plan to have, instead of a table only, a bark basket containing growing ferns. And the seat could be made of twisted branches, too, or some wicker chairs might be painted green or brown.

"The basket of ferns would thrive most charmingly in the shade, and I am sure you would delight, in each new place you went to, in collecting ferns to add to those growing in it.

"I may just add a hint that many little plants which grow on walls and in clefts of trees, would look pretty on the roof of your garden house."

### DECEMBER, 1862.—31 DAYS.

PHASES OF THE MOON.—Full, 6th, 7h. 38m. morn.; Last Quarter, 14th, 10h. 33m. morn.; New, 21st, 5h. 4m. morn.; First Quarter, 27th, 11h. 44m. even.

| D<br>M | Sun<br>rises. | Sun<br>sets. | Weather near London, 1861. |        |              |     |      |     | Rain.                           | THE COUNTRY.             |
|--------|---------------|--------------|----------------------------|--------|--------------|-----|------|-----|---------------------------------|--------------------------|
|        |               |              | BAROMETER.                 |        | THERMOMETER. |     |      |     |                                 | Rural Sights and Sounds. |
|        |               |              | Mx.                        | Min.   | Mx.          | Mn. | Me.  |     |                                 |                          |
|        | h. m.         | h. m.        |                            |        |              |     |      |     |                                 |                          |
| 1      | 7 45          | 3 53         | 30.245                     | 29.808 | 51           | 23  | 37.0 | .00 | All deciduous trees leafless    |                          |
| 2      | 7 46          | 3 52         | 30.674                     | 30.295 | 50           | 20  | 35.0 | .00 | Common groundsel flowers        |                          |
| 3      | 7 48          | 3 51         | 30.214                     | 30.105 | 53           | 16  | 34.5 | .00 | Houseflies disappear            |                          |
| 4      | 7 50          | 3 51         | 30.114                     | 29.821 | 52           | 23  | 37.5 | .30 | Ivy berries ripen               |                          |
| 5      | 7 51          | 3 50         | 29.744                     | 29.693 | 49           | 22  | 35.5 | .00 | Thelotrema on holly bark        |                          |
| 6      | 7 52          | 3 50         | 29.671                     | 29.271 | 51           | 40  | 45.5 | .46 | Hollyberries ripen              |                          |
| 7      | 7 53          | 3 50         | 29.384                     | 29.195 | 60           | 34  | 47.0 | .00 | Dandelion flowers               |                          |
| 8      | 7 55          | 3 49         | 29.674                     | 29.414 | 55           | 39  | 47.0 | .23 | Shepherds' purse flowers        |                          |
| 9      | 7 56          | 3 49         | 29.832                     | 29.788 | 59           | 36  | 47.5 | .00 | Common chickweed flowers        |                          |
| 10     | 7 57          | 3 49         | 29.783                     | 29.787 | 57           | 32  | 44.5 | .01 | Skylarks congregate             |                          |
| 11     | 7 58          | 3 49         | 30.040                     | 29.988 | 56           | 37  | 46.5 | .06 | Polyanthus flowers              |                          |
| 12     | 7 59          | 3 49         | 29.876                     | 29.659 | 54           | 44  | 49.0 | .04 | Wild ducks on inland marshes    |                          |
| 13     | 8 0           | 3 49         | 29.460                     | 29.384 | 54           | 34  | 44.0 | .06 | Greenfinches congregate         |                          |
| 14     | 8 1           | 3 49         | 30.029                     | 29.885 | 53           | 39  | 46.0 | .00 | Mistletoe berries ripen [places |                          |
| 15     | 8 2           | 3 49         | 30.147                     | 30.119 | 53           | 40  | 46.5 | .07 | Furze flowers in sheltered      |                          |
| 16     | 8 3           | 3 49         | 30.190                     | 30.124 | 51           | 40  | 45.5 | .00 | Colt's-foot flowers [weather    |                          |
| 17     | 8 3           | 3 49         | 30.167                     | 30.012 | 49           | 35  | 42.0 | .00 | Hepatica flowers in mild        |                          |
| 18     | 8 4           | 3 50         | 29.944                     | 29.899 | 46           | 36  | 41.0 | .00 | Primroses flower in sheltered   |                          |
| 19     | 8 5           | 3 50         | 30.222                     | 30.177 | 45           | 30  | 37.5 | .00 | Chaffinches flock [places       |                          |
| 20     | 8 5           | 3 50         | 30.376                     | 30.303 | 42           | 35  | 38.5 | .00 | Marsh titmouse sings            |                          |
| 21     | 8 6           | 3 51         | 30.380                     | 30.233 | 41           | 37  | 39.0 | .00 | Glaucous Riccia on rocks        |                          |
| 22     | 8 6           | 3 51         | 30.205                     | 30.194 | 45           | 36  | 40.5 | .00 | Moles throw up hillocks         |                          |
| 23     | 8 7           | 3 52         | 30.270                     | 30.250 | 45           | 33  | 39.0 | .00 | Colymbetes fuliginosus          |                          |
| 24     | 8 7           | 3 52         | 30.286                     | 30.176 | 45           | 30  | 37.5 | .00 | Drab-day moth                   |                          |
| 25     | 8 8           | 3 53         | 30.169                     | 30.092 | 46           | 18  | 32.0 | .00 | Lepralia abundant at seaside    |                          |
| 26     | 8 8           | 3 54         | 30.300                     | 30.200 | 35           | 20  | 27.5 | .00 | Tremella on dead wood           |                          |
| 27     | 8 8           | 3 55         | 30.499                     | 30.433 | 40           | 25  | 32.5 | .00 | Nidularia on dung-heaps         |                          |
| 28     | 8 8           | 3 55         | 30.454                     | 30.409 | 39           | 30  | 34.5 | .00 | Carabus morbillosus             |                          |
| 29     | 8 8           | 3 56         | 30.414                     | 30.327 | 31           | 22  | 26.5 | .00 | Graphis stricta on bark         |                          |
| 30     | 8 8           | 3 57         | 30.380                     | 30.336 | 36           | 24  | 30.0 | .01 | Yellow hue Quaker moth          |                          |
| 31     | 8 9           | 3 58         | 30.368                     | 30.239 | 39           | 29  | 34.0 | .00 | December moth                   |                          |

## NOTES FOR THE GARDEN.

**KITCHEN GARDEN.**—Make plantations of rhubarb, seakale, asparagus, and horseradish. Roots of dandelion, packed together in leaf-mould, and put into gentle heat, will furnish a delicate salad in five or six weeks. Paskall's seakale pots are best for the purpose. Keep dung and all soluble matters under cover. Turn over manures, and put aside in heaps to be frozen, rotted leaves, and other materials suitable for potting, and when well sweetened and pulverized, remove to bins in the potting-shed to keep dry for use. Get sticks and stakes tied up in bundles ready for use; wheel turf and weeds to the muck-pit; get pots washed and sorted over, and crocks sifted into sizes for the potting-bench.

**FRUIT GARDEN.**—Let nothing lie in by the heels an hour longer than can be helped. Bush fruits properly taken up and properly planted ought not to miss the move in the slightest degree, but you are sure to lose a whole season if they lie about waiting to be planted. Root-prune any trees that grow too luxuriantly to bear well. Lay boards in a slope over vine borders, to shelter them from excessive cold-rains. Unnail from the walls the

younger shoots of tender wall-trees, to prevent premature breaking. Strawberry-beds may be made this month, but there is no certainty of a crop if left so late.

**FLOWER GARDEN.**—Keep everything as tidy as possible. If any bulbs remain out of the ground, get them in without delay. Take up tea-roses, and lay in by the heels in a shed, out of reach of frost. Cut down fuchsias that are to remain out all the winter, and cover their roots with coal ashes. Pansies, pinks, and other choice things in open beds, should have a little light litter sprinkled over them in frosty weather, or be protected with canvas on hoops; tulips protect in the same way. Keep auriculas and other plants in frames moderately dry, and free of dead leaves.

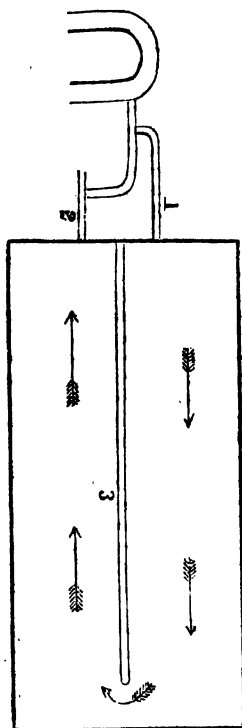
**GREENHOUSE AND STOVE.**—Vines that are forward will want frequent attention and a very regular heat. Ericas must have air at every opportunity, and if brought in with flowering shrubs to be forced, must be very gently stimulated, as they are impatient of heat. Soft-wooded plants must have fire-heat during foggy weather as well as during frost. Greenhouse, 40° to 45°. Vines started 60° by day.

## TO CORRESPONDENTS.

**PIT FOR PROPAGATING AND THE GROWTH OF MELONS.**—I have a cold brick-pit ten feet long, by five feet wide, and rising three feet six inches at the back, which I want to heat with bottom heat, so as to be able to propagate bedding plants in spring, and to grow cucumbers or melons in afterwards. Will you kindly assist me, by informing me, how I can accomplish this in the *cheapest* manner by means of a brick or tile pipe flue, and how the stove or fireplace should be placed in one end so as to secure sufficient draught for the flue. The pit, being inside, rather below the level of the ground, I suppose the fireplace must be sunk in the ground outside, low enough to admit of a slight rise to the flue? or would it be better to build the pit a little higher, so as to admit of the flue being placed *level* with the ground outside? Would you tell me also what sort of stove or fireplace is the *most economical in fuel*, and had I better have

it built *into* one end of the pit or not? I thought of having a small brick Arnett stove built into one end, but I see Mr. Rivers, in "The Orchard House," states that these stoves will not do with a horizontal flue of a greater length than *three feet*.—*Amateur B.* [We apprehend that the kind of heat generated by the plan you propose, of carrying a flue through your pit, would not be congenial either for the growth of cucumbers, or the propagation of bedding-plants. It would be a dry and irregular heat instead of a moist and constant one. If, instead of constructing a flue, you make a hot-water tank of the whole area of the inside of the pit, so as to contain six inches in depth of water, and attach a small boiler to be fixed outside, a constant and genial warmth would be obtained at a small expense of time and fuel. Raise both the back and front walls of your pit twelve or fifteen inches, then procure some flagstones, or as it is

commonly called, Yorkshire paving, large enough to reach across the pit, or if more convenient, the breadth may be spanned by two pieces, the middle edges resting on a course or two of bricks as the case may be. Let this stone pavement be laid exactly level, two feet nine inches from the top of the brick part of the pit, then lay two courses of bricks all round the outside of the pavement in cement; on the top of these two courses, lay one brick on edge embedded firmly in cement; this will leave a small ledge



1, Flow; 2, Return; 3, Brick division.

on which to rest some slates, on which to lay the mould, etc. Also make a division in the centre, with two courses of bricks in cement, leaving a small space at the end farthest from the boiler, so that the water may circulate. After this is done cover the whole with slates, two slates will reach across, one edge resting on the ledge of the outer wall, and the other resting halfway over the middle wall; secure each end with cement, and

also let some stiff cement be applied to the joints to render them impervious to the steam, which will sodden the roots of the plants or cuttings, if allowed to escape through into the soil. This arrangement will give two feet of clear space for mould and plants at the back of the pit, and thirteen inches in front; an average foot of soil all over the bed, making it a little deeper at the back and somewhat shallower in the front, will be found to be ample for anything that may be grown in the pit. The flow and return pipes from the boiler must be inserted into the tank in the first course of brick, half an inch from the stone, so that the settleings of the water may not penetrate into the boiler. The advantage of raising the pit will be, that it will not be necessary to make the stoke-hole so deep. This arrangement will cost very little, if any, more than a brick flue, and will be entirely satisfactory.]

**ERYTHRINA CRISTA GALLI. — E. A. W. —**

This is very readily propagated by taking off the young shoots from the crown when they are three or four inches in length, and striking them in sand in heat under a bell-glass. Or, when the plant has flowered, cut the shoot into lengths, with an eye and a leaf attached to each piece, insert in sand in heat as before, and they will strike as readily as the eyes of a vine or a rose.

**GREENHOUSE CONSTRUCTION. — C. E. H. —**

The flue will heat your house much more efficiently than a stove, and the flue will be better carried all round as at A in the plan. By carrying it round as at B, a large space will be both awkward to get at and difficult to occupy profitably. Either carry the centre of the house six inches higher, or reduce the framework to three feet six inches, so as to give a sharper pitch to the roof; by this plan you will have less drip, and a larger amount of benefit from the winter's sun. The brick-work need not be more than four inches; you cannot have your fireplace and chimney in a better position, try to secure a small rise in the flue from beginning to end, no matter how little, so as it is a rise. Two-inch deal will be strong enough for the lights, but you must use quartering for the door-posts, uprights, rafters, and plates. As to the question of removal, to be quite safe, you had better lay some timber on the surface of your ground, and put the entire erection upon it; there will then not be the slightest quibble or difficulty about it.

**EVERGREEN CREEPER. — Can you tell me**

of any evergreen creeper which would grow without nailing on a house cased with Portland cement. A friend has been obliged to case a house of gray stone with Portland, on account of the porousness of the original material. Ivy grew luxuriantly on the stone, but it will not cling to the cement, and my object in writing this, is to inquire if the house can now be planted with some substitute.—Yours, *Ivy Green*. [We print this letter in hope of getting a hint from some of our readers as to what had best be done to cover this Portland casing. We know of no evergreen that will train itself as ivy does under the circumstances named. Virginian creeper will cling to anything, and would make a grand show all summer and autumn on those walls, but it is not evergreen. We regret we cannot offer one word of advice.]

**BED OF LILY OF THE VALLEY.**—*Lavender Hill* has a bed of lily of the valley, which are unsightly when out of bloom, and the question asked about them is whether the leaves may be cut off or whether the bed can be sown with flower-seeds to make a show all the summer. It would be very bad advice if we were to say cut the leaves off, because that would jeopardize the next season's bloom. So we must not counsel the sowing of seeds amongst them, because they want all the light and air they can get to perfect their flower-buds for next year. Still, if we had such a bed under the drawing-room windows—a very bad place for it—we would risk a little. We would, as soon as the bloom was over, strew amongst the plants some old powdery dung, to make a thin top-dressing of the soil amongst them, and then sow mignonette very thinly. By the time that got of any size the lilies would be finishing their seasonal growth, and we should have the odour of the mignonette to compensate for the shabby appearance of the bed. But we must again say there would be a little risk about it, and we cannot advise such a way of using lily of the valley.

**BARN CHERRY-TREE.**—*E. A. W.* has in her garden against the wall a fine healthy Bigarreau cherry-tree; it has been there six or seven years; it blooms freely, but has never set a cherry. *E. A. W.* would be glad to know what may be the cause of this. The gardener talks of digging about it, and cutting off the tap root; will that be a good course to pursue? Are there any cherry-trees that are only male and only female? [The gardener's proposal is a very good one; a better

plan will be to take the tree entirely out of the ground, prune all the roots to about fifteen or eighteen inches in length, and replant, using sandy loam to close the roots in with. Sterility in fruit-trees is very often occasioned by their being planted too deep, so that the graft is covered. If that has been the case with yours, take care in replanting that the roots are only just covered. Never heard of any member of the genus *Cerasus* producing flowers of but one sex.]

**TREATMENT OF COLEUS AND ZICHYA.**—In consequence of your mention of *Coleus Verschaffelti*, I purchased some plants, and struck numerous cuttings, but am sorry to find that since the cold weather began, a few weeks since, they are losing their leaves, both old and young, and seem dying. I thought that a summer bedding plant would stand a cool greenhouse. Will they live? I found the same difficulty with *Mandevillea* as your correspondent *A. B. S.*, and shall remove it. Will *Zichya Pannosa*, of which I raised several seedlings in the spring of 1861, and which seemed to struggle through last winter, flourish if trained next the glass. I only use fire during frost, and the temperature is sometimes down to 40°. [Your *Coleus* must have the warmth of a stove to preserve it in health through the winter; like many other things that will flourish in the open air in our summers, it cannot be kept alive even in a common greenhouse temperature. The *Zichya* will do well in any very light, airy situation, where it will not get frozen, provided it is potted in good sandy fibrous peat and loam, equal parts, well drained. It may also be planted out, and will run like a *Kennedy*, and flower beautifully in May.]

**FAILURE OF WALL-TREES.**—Having a garden wall under my care, with the border planted with peach and nectarines, I wish to ask your opinion and advice under the following circumstances:—The wall was built about twenty-six years ago; the border is all made soil, on a chalk bottom; the trees were planted, and produced beautiful crops of fruit for about twelve or fourteen years, when they began to fail, when, six years ago, I planted some young ones between them to take their place, having first removed and put in fresh soil, hoping for the same success, but was doomed to disappointment, as, after the first year, they began to fail, and in three years from the time of planting were entirely dead. Thinking insects had something to do

with it, my employer had the walls pointed and coloured; we then planted another batch of trees, but all to no purpose, as they show the same symptoms of death, which are an unnatural darkness at the buds; and in early spring you find three parts dead, and the tree becomes worthless. I conclude now, from close examination, that the wall is damp, as after autumnal rains they remain wet so long after the rain has fallen; but the trees used to do so well on the wall, which is built with clamp bricks, and has no coping.—*George Butler*, gardener to the Rev. T. Grantham, Bramber Rectory, Steyning, Sussex. [Your trees are suffering from stagnant moisture in the soil; make a drain at the distance of six feet from the wall, two feet in depth, lay a row of drain-pipes or tiles at the bottom, over them nine or twelve inches of brickbats or other coarse rubble; make sure of an outlet for any water that may accumulate in the drain. Then begin at one end of the border, take up all the trees carefully without exception, cut off all diseased and rotten roots, and lay the trees in some safe place while the border undergoes renovation. When the trees are all up, lay an inch or two of good stiff loam all over the border, from the wall to the drain; then begin at one end and turn over the soil fifteen inches deep, incorporating the new and old soil well together, and lay it in three sharp ridges, so that as much surface as possible may be exposed to the action of the atmosphere; let it lay a fortnight in this position, when give the whole another turn over, still preserving the ridge fashion. After having laid another fortnight, if the weather is open and genial, the border may be levelled down, and the trees again inserted in their proper places, taking care in replanting that the roots are only just covered. If, on examination, the success of any of the trees is doubtful, throw them away, and procure good healthy plants from the nursery. If the above plan is carried out, the trees will not in future suffer from excessive moisture.]

#### MUSGRAVE'S SLOW COMBUSTION STOVE.—

*Mrs. L. P., and other correspondents.*—Precisely as we first described this stove as heating one of our houses (a lean-to thirty feet by ten feet), so it remains and is doing its duty as well as ever; and though in the early trials of it with great lengths of pipe, it was roughly used, it has not been cleaned or in any way altered. It is fitted with an

upright flue, formed of three lengths of four-inch glazed drain-pipe, with an iron mushroom cap to keep out rain and gusts of wind. It has kept heliotropes, geraniums, petunias, the artillery plant, justicias, and other equally tender plants, besides the ordinary run of bedding stock, and is a valuable contrivance for use in houses not furnished with flues or hot water pipes. It is open to the objection common to all stoves in greenhouses, and that is, that there is of necessity some amount of dust. We have always said that stoves in greenhouses are objectionable, and this is as true of the Arnott brick stove, as of Musgrave's slow combustion stove; but once admit a stove of any kind, and there is nothing to equal Musgrave's. To make sure of success, care must be taken to place the stove so as to promote a quick draught. It is a *slow combustion* stove, and therefore does not gallop away with the fuel; and once in action, continues to burn slowly for many hours. But this very character requires that there must be no trifling; a tortuous and lengthy flue will cause it to smoke, and a metal pipe exposed to the air will cool so quickly on a frosty night as to put the fire out. Place the stove so that there will be a regular flow of cold air along the floor of the house to it, and a direct outlet above for the products of combustion. If a brick or tile drain can be carried along the floor to it, all the better; but by placing four bricks or blocks of stone under the four corners of the stove, this slight elevation will suffice. *L. P.* wishes to use it to heat a hall or staircase; for this it will do admirably, if placed on a slab of stone in the hall, and fitted with a drain-pipe or brick flue passing direct into a chimney always in use, or direct upwards into the open air, as far as possible removed from the walls of the building. The drain-pipes may be cased in wood-work if their appearance is objectionable, as the flue is never more than moderately warm, the stove so completely sucks the heat out of the flue. Lastly, all beginners with this stove are advised to light a few shavings or pieces of paper in it before lighting the fire properly, so as to warm the flue and establish a draught. This may not be necessary when it gets fairly to work, but is advisable at the first start.

BOOKS RECEIVED.—“The Garden Oracle,” for 1863, is, we hope, a good shilling's worth of horticultural information. It has increased in sale every year from

the first, and this year has been in such demand that the printer had a difficulty in supplying copies to meet the demand. This is gratifying of course, but it is also a proof that the work serves the purpose of usefulness for which it was intended. The issue for next year contains a list of about 400 rare, curious, and useful bulbous plants, distributed so as to furnish subjects in bloom in all seasons; also notes on the rapid multiplication of tunicated bulbs, a new mode of growing quantities of cyclamen, on the resting of bulbs; a new and simple method of taking honey from depriving hives; on foliage plants for beds and ribbons; on annuals grown at Stoke Newington; improved lists of dahlias, roses, chrysanthemums, etc.; descriptions of the new plants of the past year; and all the ordinary information proper to an almanack.—"Rivers's Miniature Fruit Garden," published by Longman, has reached the *eleventh* edition, and is worth its weight in gold. The new issue contains many useful additions and some notes on the culture of pears and apples in town gardens.—"Thompson on the Vine," published by Blackwood and Sons, is a noble contribution to horticultural literature. It is at once an elementary and an advanced treatise; and the young beginner and the old exhibitor will each find in it much original information of the highest value.—"The Parlour Gardener," published by Sampson Low and Co., is a pretty little book, full of practical advice on the in-door culture of flowers. It is so good that we regret that the anonymous author has embellished it with a stupid frontispiece, and given prominence to one particular house for the supply of parlour ornaments and plants. Forgetting these small objections, this is really a charming little book.

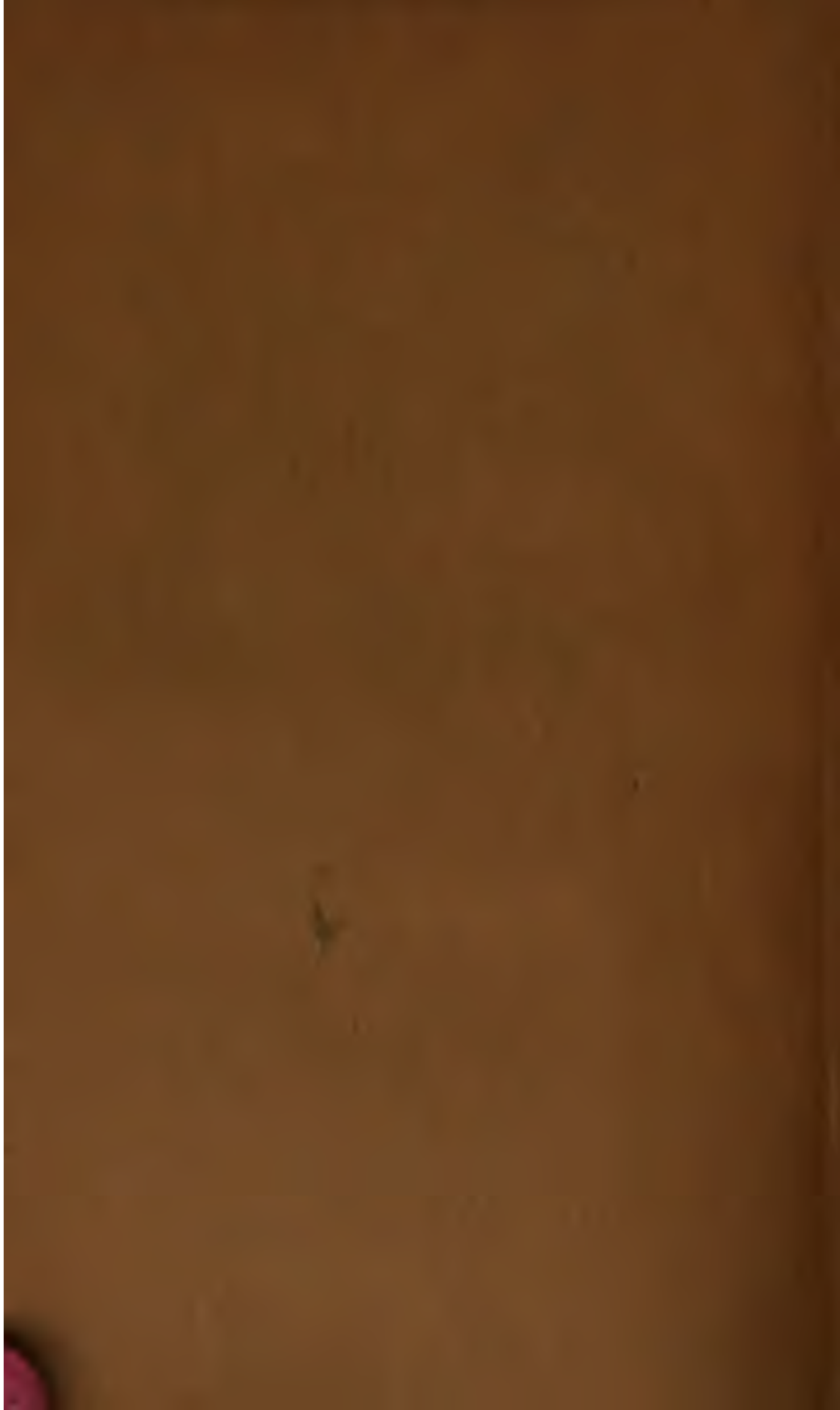
**CATALOGUES.**—"Catalogue of Fruit Trees, by Thomas Rivers, Sawbridgeworth," is wholly rearranged, and in substance is a new work. The fruits are divided into classes according to the distinct sections of each class, and the descriptions are full and accurate.—"Catalogue of Strawberries, by Thomas Rivers." A good supplement to the general fruit catalogue. We are above all things glad that it is a short list, there are in fact *only* fifty-six varieties described in it, which is moderate for such a nursery as that at Sawbridgeworth; they are classed as early,

dessert, culinary, hantbois, and autumnal strawberries, to facilitate selection.—"Descriptive Catalogue of Selected Roses by John Harrison, Darlington," is a very nice short list, in which, as in all the rest, the Manetti is fully vindicated.—"Catalogue of Flower Roots, Plants, etc., by Carey Tyso, of Wallingford, Berks," is as usual chiefly occupied with anemones and ranunculuses, to which are added lists of roses, conifers, fruit trees, and ornamental shrubs.—"Catalogue of New Plants, by James Veitch, Jun., King's Road, Chelsea," contains descriptions and prices of the new Japanese conifers, new caladiums, rhododendrons, etc.; a very interesting catalogue.—"Catalogue of New Plants, by William Bull, King's Road, Chelsea."—"Catalogue of Hollyhocks, by W. Chater, Saffron Walden," is the most complete list of the kind yet produced. It contains an alphabetical arrangement of the varieties, a classification of hollyhocks in colours, and selections of the best of each at various prices, to which are added some useful hints on culture.

**VARIOUS.**—*S. H.*—The only candle lamp likely to suit you is Palmer's minimum, which you can buy for 6d., and the candles for 6d. a box. You had better get a man to make you a tin oil lamp to measure.—*Maud.*—A gas stove to heat a boiler, and thence by hot water pipes to heat your vinery, will answer very well, but a gas stove in the vinery will probably do mischief. Messrs. Phillips of Skinner Street, Snow Hill, and Mr. Trotman of New Road, Hammer-smith, make gas stoves that answer admirably for heating plant-houses by hot water. Hartley's rough plate-glass is the material you require in place of the painted glass. Instead of paint use a wash of whiting and size put on in May, and washed off in August, for houses where strong sunshine is objectionable.—*W. Pickup.*—Messrs. Tregon, of Jewin Street, will supply whatever you want in the way of fountain fittings.—*R. Sibley.*—We really cannot recommend any dealer to supply bush apple trees; for anything out of the ordinary way we do not mind the mention of names. Apply to some of the traders who advertise in this work, and you will be well served.—*A. B.*—It is *Sedum Sieboldii*, a lovely thing for suspended baskets. It should always be grown under glass.









3 2044 102 883 477